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Version 1.0

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Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment onto an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Shielded interconnect cables and a shielded AC power cable must be employed with this equipment to ensure compliance with the pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system's manufacturer could void the user's authority to operate the equipment.

Declaration of Conformity

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

This device is in conformity with the following EC/EMC directives:

❑ **EN 55022**	Limits and methods of mesurement of radio disturbance characteristics of information technology equipment
❑ **EN 61000-3-2**	Disturbances in supply systems caused
❑ **EN 61000-3-3**	Disturbances in supply systems caused by household appliances and similar electrical equipment " Voltage fluctuations"
❑ **EN 55024**	Information technology equipment-Immunity characteristics-Limits and methods of measurement
❑ **EN 60950**	Safety for information technology equipment including electrical business equipment
❑ **CE marking**	CE

Canadian Department of Communications

This class B digital apparatus meets all requirements of the Canadian Interference-causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Réglement sur le matériel brouilieur du Canada.

About the Manual

The manual consists of the following:

Chapter 1 **Introducing the Motherboard**	Describes features of the motherboard.	⇨ page 1
Chapter 2 **Installing the Motherboard**	Describes installation of motherboard components.	⇨ page 7
Chapter 3 **Using BIOS**	Provides information on using the BIOS Setup Utility.	⇨ page 27
Chapter 4 **Intel® Matrix Storage Manager RAID Configurations**	Describes Intel® Matrix Storage Manager RAID Configurations.	⇨ page 71
Chapter 5 **Trouble Shooting**	Provides basic trouble shooting tips.	⇨ page 77

TABLE OF CONTENTS

Preface i

Chapter 1 1
Introducing the Motherboard 1
Introduction....1
Pakage Contents....1
Specifications....2
Motherboard Components....4
I/O Ports....6

Chapter 2 7
Installing the Motherboard 7
Safety Precautions....7
Installing the Motherboard in a Chassis....7
Checking Jumper Settings....8
Installing Hardware....9
Installing the Processor....9
Installing the CPU Cooler....11
Installing Memory Modules....12
Installing Add-on Cards....14
Connecting Optional Devices....16
Installing a SATA Hard Drive....22
Connecting Case Components....23
Front Panel Header....26

Chapter 3 27
Using BIOS 27
About the Setup Utility....27
The Standard Configuration....27
Entering the Setup Utility....27
Using BIOS....28
BIOS Navigation Keys....29
Main Menu....30
Advanced Menu....31
Chipset Menu....51
M.I.B.X Menu....58
Boot Menu....66
Security Menu....68
Exit Menu....69
Updating the BIOS....70

Chapter 4 **71**
Intel® Matrix Storage Manager RAID Configuration **71**
Before creating a RAID set....71
Entering Intel® Matrix Storage Manager RAID BIOS utility....72
Creating a RAID set....73
Deleting a RAID set....75
Reseting disks to Non-RAID....76
Exiting Setup....76

Chapter 5 **77**
Trouble Shooting **77**
Start up problems during assembly....77
Start up problems after prolong use....78
Maintenance and care tips....78
Basic Troubleshooting Flowchart....79

Chapter 1
Introducing the Motherboard

Introduction

Thank you for choosing the B85H3-M5 motherboard. This motherboard is a high performance, enhanced function motherboard designed to support the LGA1150 socket for Intel 4th Generation Core™ Family processors for high-end business or personal desktop markets.

This motherboard is based on Intel® B85 Chipset for best desktop platform solution. It supports up to 32 GB of system memory with dual channel DDR3 1600/1333 MHz. One PCI Express x16 Gen3 slot and one PCI Express x1 Gen2 are supported, intended for Graphics Interface. In addition, two PCI slots are for extending usage.

It integrates USB 2.0 and USB 3.0 interface, supporting up to eight USB 2.0 ports (two USB 2.0 ports at the rear panel and three USB 2.0 headers support additional six USB 2.0 ports) and four USB 3.0 ports(two USB 3.0 ports at rear panel and one USB 3.0 header supports two USB 3.0 ports).

The motherboard is equipped with advanced full set of I/O ports in the rear panel, including PS/2 mouse and PS/2 keyboard connectors, one Display port (DP), one HDMI port, one VGA port, one DVI port, two USB 2.0 ports, two USB 3.0 ports, one LAN port, and audio jacks for line-in, line-out and microphone.

In addition, this motherboard supports four SATA 6.0Gb/s connectors and one SATA 3Gb/s connector for expansion.

Package Contents

Your motherboard package ships with the following items:

- ❑ B85H3-M5 Motherboard
- ❑ Quick Installation Guide
- ❑ User Manual
- ❑ DVD
- ❑ I/O Shield
- ❑ 2 SATA Cables

The package contents above are for reference only, please take the actual package items as standard.

Specifications

CPU	• LGA1150 socket for Intel 4th Generation Core™ Family processors
Chipset	• Intel® B85 Chipset
Memory	• Dual-channel DDR3 memory architecture • 4 x 240-pin DDR3 DIMM sockets support up to 32 GB • Supports DDR3 1600/1333 MHz
Expansion Slots	• 1 x PCI Express x16 Gen3 slot • 1 x PCI Express x1 Gen2 slot • 2 x PCI slots
Storage	• Supported by Intel® B85 Express Chipset - 5 x Serial ATA 6.0 Gb/s devices - 1 x Serial ATA 3.0 Gb/s device - RAID 0, RAID 1, RAID 5, RAID 10 Configuration
Audio	• Realtek ALC662 6-Ch HD audio CODEC
LAN	• Realtek RTL8111EPV (DASH)
Rear Panel I/O	• 1 x PS/2 keyboard & PS/2 mouse connectors • 1 x Display port(DP)* • 1 x HDMI port* • 1 x VGA port* • 1 x DVI port* • 2 x USB 2.0 ports • 2 x USB 3.0 ports • 1 x RJ45 LAN connector • 1 x Audio port (Line in, line out and microphone) **Support 3 independent output simultaneously*
Internal I/O Connectors & Headers	• 1 x 24-pin ATX Power Supply connector • 1 x 4-pin ATX_12V Power Supply connector • 1 x 4-pin CPU_FAN connector • 1 x 4-pin SYS_FAN connector • 4 x SATA III 6.0Gb/s connectors • 1 x SATA II 3.0Gb/s connector • 1 x Front panel switch/LED header • 1 x Front panel audio header • 3 x USB 2.0 headers support additional six USB 2.0 ports • 1 x ME_UNLOCK header • 1 x USB 3.0 header supports additional two USB 3.0 ports • 6 x Onboard Serial port headers (COM) • 1 x Clear CMOS header with jumper • 1 x Onboard parallel port header (LPT) • 1 x Buzzer header • 1 x Case open header • 1 x SPK_R1 header • 1 x SPK_L1 header • 1 x Mono header • 1 x Onboard NUVOTON NPCT650 or NPCT420 TPM IC

System BIOS	•	AMI BIOS with 96Mb SPI Flash ROM
	•	Supports Plug and Play, STR (S3) / STD (S4) , Hardware monitor
	•	Supports ACPI & DMI
	•	Audio, LAN, can be disabled in BIOS
	•	Supports Multi-Language
	•	F7 hot key for boot up devices option
	•	Supports PgUp clear CMOS Hotkey(Has PS2KB Model only)
	•	Supports Dual/Triple Display(depends on display output)
Form Factor	•	Micro ATX Size, 244mm x 244mm

Chapter 1

Motherboard Components

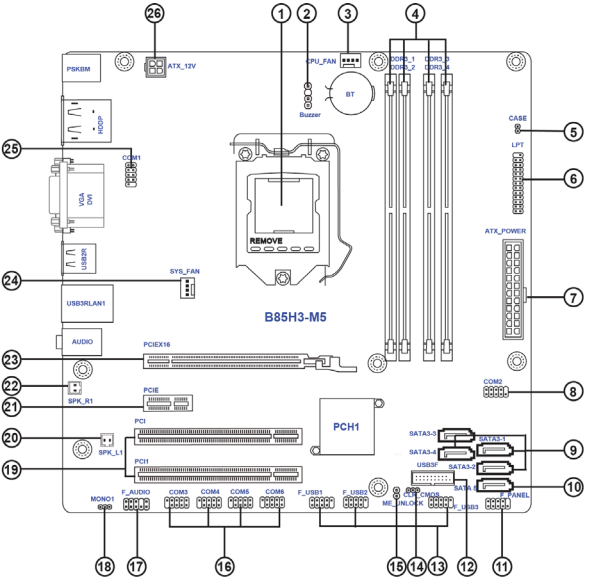
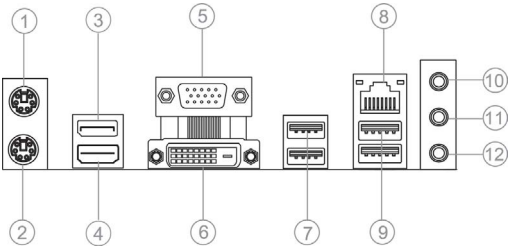


Table of Motherboard Components

LABEL	COMPONENTS
1. CPU	Supports the LGA1150 socket for 4th Generation Core™ Family Processors
2. Buzzer	Buzzer
3. CPU_FAN	CPU cooling fan connector
4. DDR3_1~4	240-Pin DDR3 long DIMM slots (Channel A: DIMM1~2 Channel B: DIMM3~4)
5. CASE	Case open header
6. LPT	Onboard parallel port header
7. ATX_POWER	Standard 24-pin ATX power connector
8. COM2	Onboard serial port header
9. SATA3_1~4	Serial ATA 6.0Gb/s connectors
10. SATA3_5	Serial ATA 3.0Gb/s connector
11. F_PANEL	Front panel switch/LED header
12. USB3F	Front panel USB 3.0 connector
13. F_USB1~3	Front panel USB 2.0 headers
14. CLR_CMOS	Clear CMOS header with jumper
15. ME_UNLOCK	ME unlock header-for factory use only
16. COM3~6	Onboard serial port headers
17. F_AUDIO	Front panel audio header
18. MONO1	MONO jumper
19. PCI/PCI1	32-bit add-on card slot
20. SPK_L1	Speaker header
21. PCIE	PCI Express x1 slot
22. SPK_R1	Speaker header
23. PCIEX16	PCI Express x16 slot
24. SYS_FAN	System cooling fan connector
25. COM1	Onboard serial port header
26. ATX_12V	Auxiliary 4-pin power connector

I/O Ports



1. PS/2 Mouse
Use the upper PS/2 port to connect the PS/2 Mouse.

2. PS/2 Keyboard
Use the lower PS/2 port to connect the PS/2 Keyboard.

3. Display Port (DP)
You can connect the display device to the display port.

4. HDMI Port
You can connect the display device to the HDMI port.

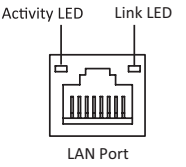
5. VGA Port
Connect your monitor to the VGA port.

6. DVI Port
Connect your monitor to the DVI port.

7. USB 2.0 Ports
Use the USB 2.0 ports to connect USB 2.0 devices.

8. LAN Port
Connect an RJ-45 jack to the LAN port to connect your computer to the Network.

Transmission Speed	LAN LED	Status	Description
100M	Activity LED	OFF	No data
		Orange blinking	Active
	Link LED	OFF	No link
		Green	Link
Giga	Activity LED	OFF	No data
		Orange blinking	Active
	Link LED	OFF	No link
		Green	Link



9. USB 3.0 Ports
Use the USB 3.0 ports to connect USB 3.0 devices.

10. Line-in (blue)
It can be connected to an external CD/DVD player, Tape player or other audio devices for audio input.

11. Line-out (green)
It is used to connect to speakers or headphones.

12. Microphone (pink)
It is used to connect to a microphone.

Chapter 2
Installing the Motherboard

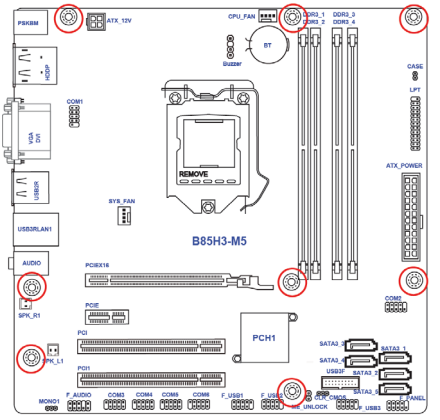
2-1. Safety Precautions

Follow these safety precautions when installing the motherboard:

- Wear a grounding strap attached to a grounded device to avoid damage from static electricity.
- Discharge static electricity by touching the metal case of a safely grounded object before working on the motherboard.
- Leave components in the static-proof bags.
- Always remove the AC power by unplugging the power cord from the power outlet before installing or removing the motherboard or other hardware components.

2-2. Installing the motherboard in a Chassis

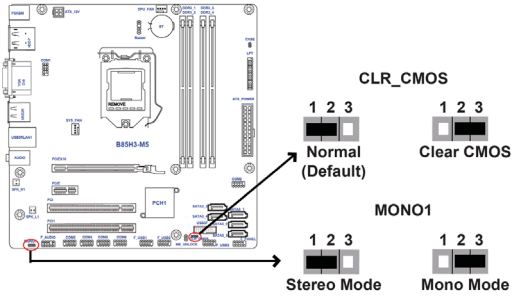
This motherboard carries a Micro ATX form factor of 244 x 244 mm. Choose a chassis that accommodates this form factor. Make sure that the I/O template in the chassis matches the I/O ports installed on the rear edge of the motherboard. Most system chassis have mounting brackets installed in the chassis, which corresponds to the holes in the motherboard. Place the motherboard over the mounting brackets and secure the motherboard onto the mounting brackets with screws.



Do not over-tighten the screws as this can stress the motherboard.

2-3. Checking Jumper Settings

The following illustration shows the location of the motherboard jumpers. Pin 1 is labeled.



To avoid the system instability after clearing CMOS, we recommend users to enter the main BIOS setting page to "Load Default Settings" and then "Save and Exit Setup".

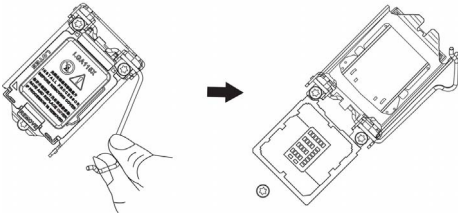
2-4. Installing Hardware

2-4-1. Installing the Processor

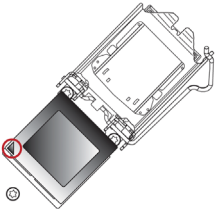
- This motherboard has an LGA1150 socket.
- When choosing a processor, consider the performance requirements of the system. Performance is based on the processor design, the clock speed and system bus frequency of the processor, and the quantity of internal cache memory and external cache memory.
- You may be able to change the settings in the system Setup Utility. We strongly recommend you do not over-clock processor or other components to run faster than their rated speed.
- The following illustration shows CPU installation components.

A. Press the hook of lever down with your thumb and pull it to the right side to release it from retention tab.

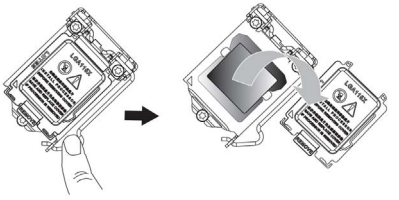
B. Lift the tail of the load lever and rotate the load plate to fully open position.



C. Grasp the edge of the package substrate. Make sure pin 1 indicator is on your bottom-left side. Aim at the socket and place the package carefully into the socket by purely vertical motion.



D. Rotate the load plate onto the package IHS (Intergraded Heat Spreader). Engage the load lever while pressing down lightly onto the load plate. Secure the load lever with the hook under retention tab. Then the cover will flick automatically.

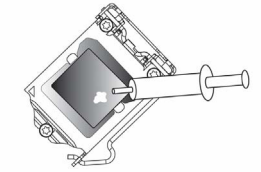


Please save and replace the cover onto the CPU socket if processor is removed.

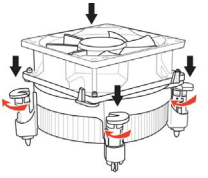
2-4-2. Installing the CPU Cooler

- Install the cooling fan in a well-lit work area so that you can clearly see the motherboard and processor socket.
- Avoid using cooling fans with sharp edges in case the fan casing and the clips cause serious damage to the motherboard or its components.
- To achieve better airflow rates and heat dissipation, we suggest that you use a high quality fan with 3800 rpm at least. CPU fan and heat sink installation procedures may vary with the type of CPU fan/heatsink supplied. The form and size of fan/heatsink may also vary.
- DO NOT remove the CPU cap from the socket before installing a CPU.
- Return Material Authorization (RMA) requests will be accepted only if the motherboard comes with the cap on the LGA1150 socket.
- The following illustration shows how to install CPU fan.

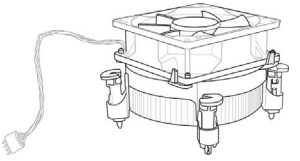
A. Apply some thermal grease onto the contacted area between the heatsink and the CPU, and make it to be a thin layer.



B. Fasten the cooling fan supporting base onto the CPU socket on the motherboard. And make sure the CPU fan is plugged to the CPU fan connector.



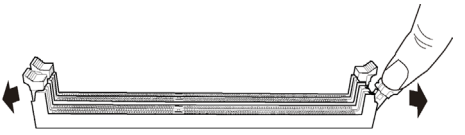
C. Connect the CPU cooler power connector to the CPU_FAN connector.



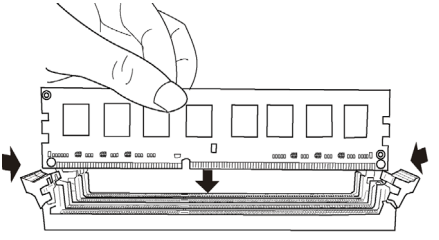
2-4-3. Installing Memory Modules

- This motherboard accommodates four memory modules. It can support four 240-pin DDR3 1600/1333.
- Do not remove any memory module from its antistatic packaging until you are ready to install it on the motherboard. Handle the modules only by their edges. Do not touch the components or metal parts. Always wear a grounding strap when you handle the modules.
- You must install at least one module in any of the four slots. Total memory capacity is 32 GB.
- Refer to the following to install the memory modules.

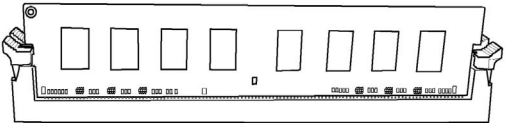
A. Push the latches on each side of the DIMM slot down.



B. Install the DIMM module into the slot and press it firmly down until it fits in place correctly. Check that the cutouts on the DIMM module edge connector match the notches in the DIMM slot.



C. The slot latches are levered upwards and latch on to the edges of the DIMM.



The four DDR3 memory sockets (DDR3_1, DDR3_2, DDR3_3 and DDR3_4) are divided into two channels and each channel has two memory sockets as following:

Channel A: DDR3_1, DDR3_2
Channel B: DDR3_3, DDR3_4

Recommend memory configuration

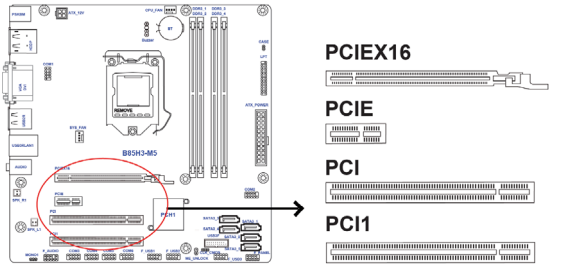
Model	Sockets			
	DDR3_1	DDR3_2	DDR3_3	DDR3_4
1 DIMM	~	Populated	~	~
1 DIMM	~	~	~	Populated
2 DIMMs	~	Populated	~	Populated
3 DIMMs	Populated	Populated	~	Populated
3 DIMMs	~	Populated	Populated	Populated
4 DIMMs	Populated	Populated	Populated	Populated

Due to Intel CPU spec definition, please follow the table above for recommended memory configuration.

1. For best performance and compatibility, we recommend that users give priority to the white DIMMs (DDR3_2/DDR3_4) when installing DIMMs.
2. We suggest users not to mix memory type. It is recommended to use the same brand and type memory on this motherboard.

2-4-4. Installing Add-on Cards

The slots on this motherboard are designed to hold expansion cards and connect them to the system bus. Expansion slots are a means of adding or enhancing the motherboard's features and capabilities. With these efficient facilities, you can increase the motherboard's capabilities by adding hardware that performs tasks that are not part of the basic system.



PCIEX16 Slot The PCI Express x16 slot is used to install an external PCI Express graphics card that is fully compliant to the PCI Express Base Specification revision 3.0.

PCIE Slot The PCI Express x1 slot is fully compliant to the PCI Express Base Specification revision 2.0.

PCI/PCI1 Slot This motherboard is equipped with two standard PCI slots. PCI stands for Peripheral Component Interconnect and is a bus standard for expansion cards, which for the most part, is a supplement of the older ISA bus standard. The PCI slots on this board are PCI v2.2 compliant.

Before installing an add-on card, check the documentation for the card carefully. If the card is not Plug and Play, you may have to manually configure the card before installation.

Follow these instructions to install an add-on card:

1 Remove a blanking plate from the system case corresponding to the slot you are going to use.

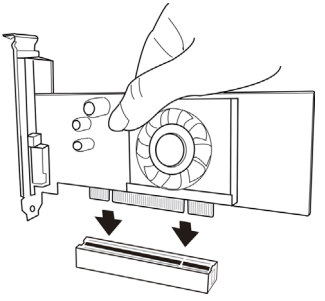
2 Install the edge connector of the add-on card into the expansion slot. Ensure that the edge connector is correctly seated in the slot.

3 Secure the metal bracket of the card to the system case with a screw.

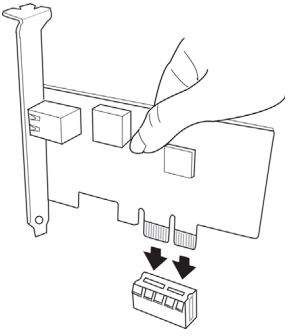
1. For some add-on cards, for example graphics adapters and network adapters, you have to install drivers and software before you can begin using the add-on card.

2. The onboard PCI interface does not support 64-bit SCSI cards.

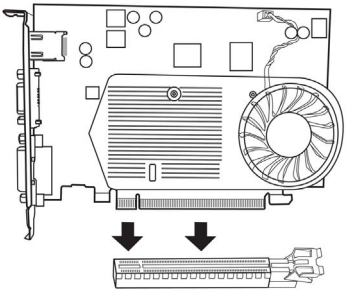
Please refer to the following illustrations to install the add-on card:



Install the VGA Card in the PCI slot



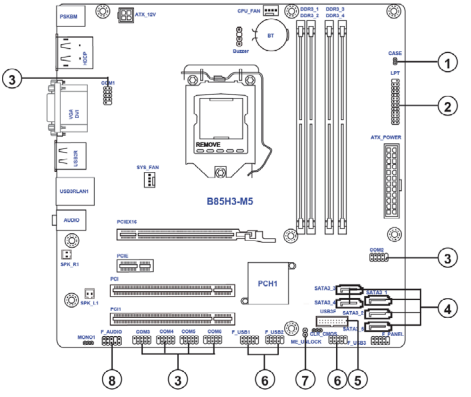
Install the LAN Card in the PCIE X1 slot



Install the VGA Card in the PCIE X16 slot

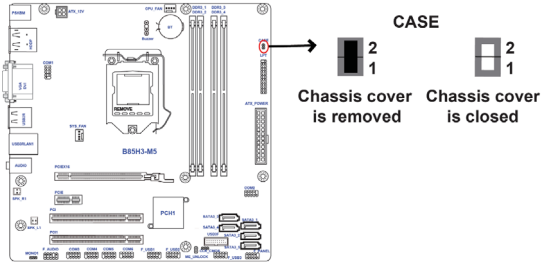
2-4-5. Connecting Optional Devices

Refer to the following for information on connecting the motherboard's optional devices:



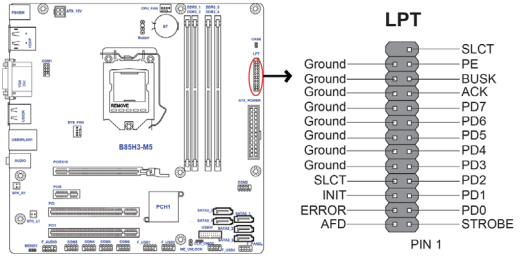
1. CASE: Chassis Intrusion Detect Header

This detects if the chassis cover has been removed. This function needs a chassis equipped with instrusion detection switch and needs to be enabled in BIOS.



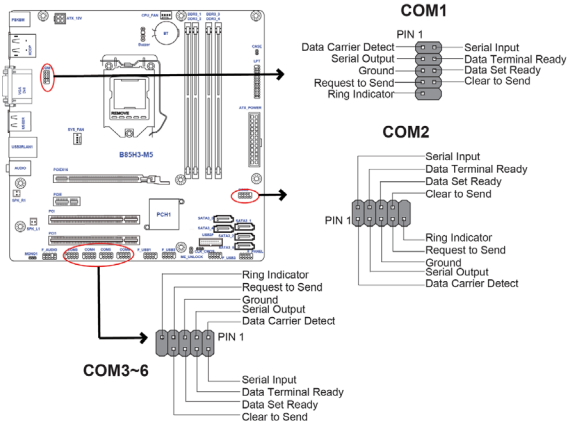
2. LPT: Onboard parallel port header

This is a header that can be used to connect to the printer, scanner or other devices.



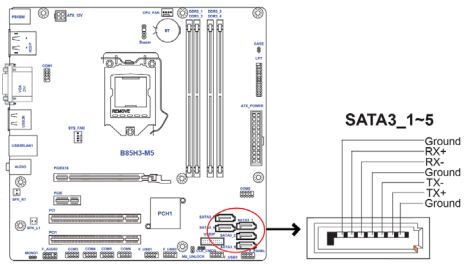
3. COM: Onboard serial port header

Connect a serial port extension bracket to this header to add a serial port to your system.



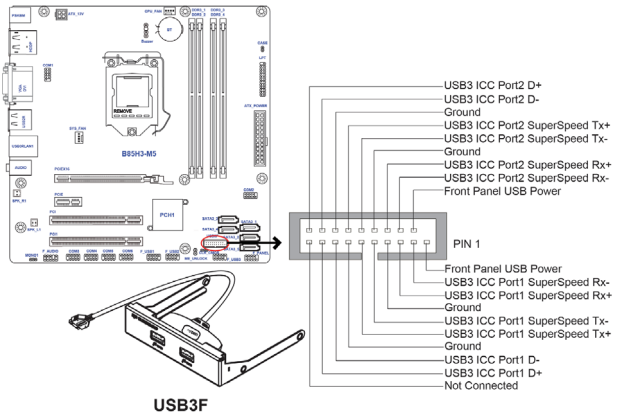
4. SATA3_1~5: Serial ATA connectors

SATA3_1~4 connectors are used to support the Serial ATA 6.0Gb/s device, SATA3_5 connector is used to support the Serial ATA 3.0Gb/s device, simpler disk drive cabling and easier PC assembly. It eliminates limitations of the current Parallel ATA interface. But maintains register compatibility and software compatibility with Parallel ATA.



5. USB3F: Front Panel USB 3.0 header

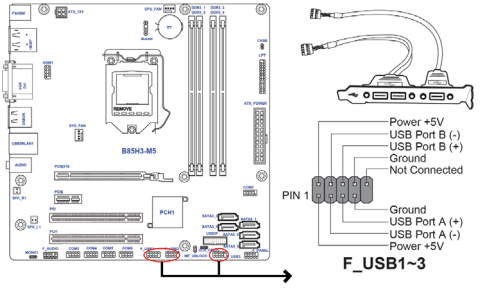
This Motherboard implements one USB 3.0 header supporting 2 extra front USB 3.0 ports, which delivers 5Gb/s transfer rate.



Please make sure that the USB cable has the same pin assignment as indicated above. A different pin assignment may cause damage or system hang-up.

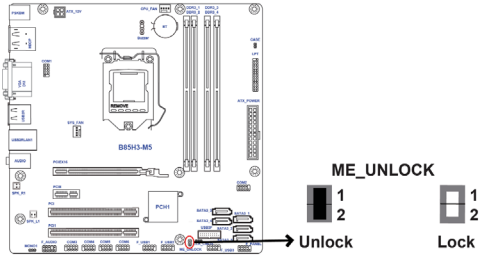
6. F_USB1~3: Front Panel USB 2.0 headers

The motherboard has three USB 2.0 headers supporting six USB 2.0 ports. Some computer cases have USB ports at the front of the case. If you have this kind of case, use auxiliary USB connector to connect the front-mounted ports to the motherboard.



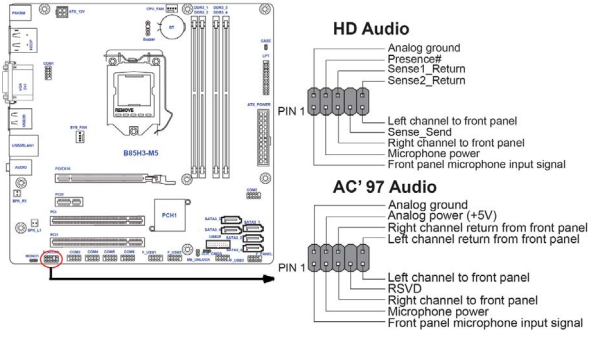
Please make sure that the USB cable has the same pin assignment as indicated above. A different pin assignment may cause damage or system hang-up.

7. ME_UNLOCK: ME Unlock Header



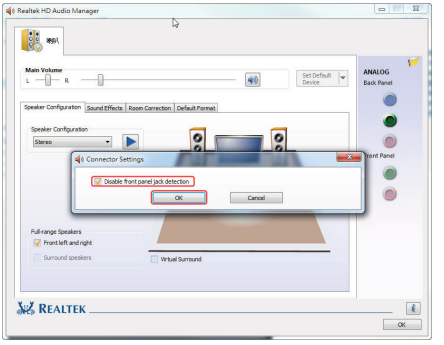
8. F_AUDIO: Front Panel Audio Header

The front panel audio header allows the user to install auxiliary front-oriented microphone and line-out ports for easier access. This header supports HD audio by default. If you want connect an AC' 97 front panel audio to HD onboard headers, please set as below picture.



AC' 97 Audio Configuration: To enable the front panel audio connector to support AC97 Audio mode.

If you use AC' 97 Front Panel, please tick off the option of "Disabled Front Panel Detect ". If you use HD Audio Front Panel, please don' t tick off "Disabled Front Panel Detect ".



** For reference only*

If you use AC' 97 Front Panel, please don' t tick off "Using Front Jack Detect ". If you use HD Audio Front Panel, please tick off the option of "Using Front Jack Detect ".

** For reference only*

2-4-6. Installing a SATA Hard Drive

This section describes how to install a SATA Hard Drive.

About SATA Connectors

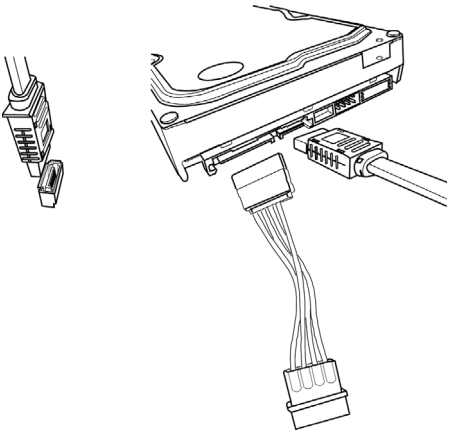
Your motherboard features five SATA connectors supporting a total of five drives. SATA refers to Serial ATA (Advanced Technology Attachment) is the standard interface for the IDE hard drives which are currently used in most PCs. These connectors are well designed and will only fit in one orientation. Locate the SATA connectors on the motherboard and follow the illustration below to install the SATA hard drives.

Installing Serial ATA Hard Drives

To install the Serial ATA (SATA) hard drives, use the SATA cable that supports the Serial ATA protocol. This SATA cable comes with a SATA power cable. You can connect either end of the SATA cable to the SATA hard drive or the connector on the motherboard.

Refer to the illustration below for proper installation:

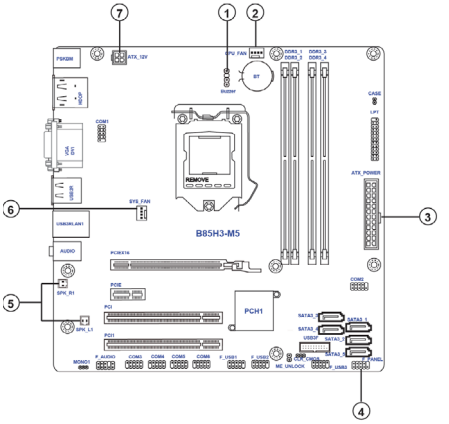
1 Attach either cable end to the connector on the motherboard.
2 Attach the other cable end to the SATA hard drive.
3 Attach the SATA power cable to the SATA hard drive and connect the other end to the power supply.



** For reference only*

2-4-7. Connecting Case Components

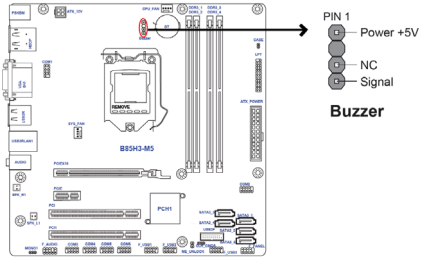
After you have installed the motherboard into a case, you can begin connecting the motherboard components. Refer to the following:



No.	Components	No.	Components
1	Buzzer	5	SPK_R1 & L1
2	CPU_FAN	6	SYS_FAN
3	ATX_POWER	7	ATX12V
4	F_PANEL	~~	~~

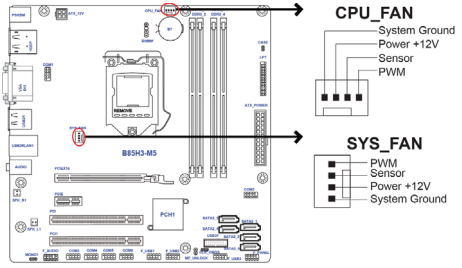
1. Buzzer: Buzzer header

Connect the case buzzer cable to **Buzzer**.



2. CPU_FAN (CPU cooling FAN Power Connector) & 6. SYS_FAN (System Cooling FAN Power Connector)

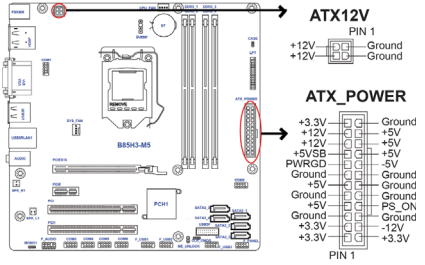
Connect the CPU cooling fan cable to **CPU_FAN**.
Connect the system cooling fan cable to **SYS_FAN**.



Users please note that the fan connector supports the CPU cooling fan of 1.1A ~ 2.2A (26.4W max) at +12V.

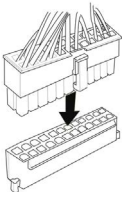
3. ATX_POWER (ATX 24-pin Power Connector) & 7. ATX12V (ATX 12V Power Connector)

Connect the standard power supply connector to **ATX_POWER**.
Connect the auxiliary case power supply connector to **ATX12V**.



Connecting 24-pin power cable

The ATX 24-pin connector allows you to connect to ATX v2.x power supply.

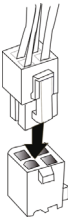


24-pin power cable

With ATX v2.x power supply, users please note that when installing 24-pin power cable, the latches of power cable and the ATX match perfectly.

Connecting 4-pin power cable

The ATX12V4P power connector is used to provide power to the CPU.

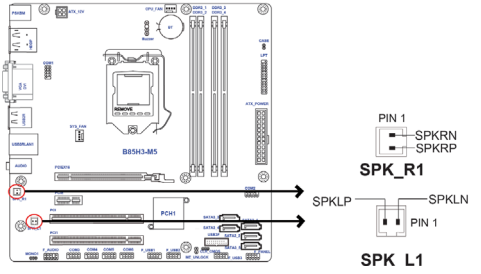


4-pin power cable

When installing 4-pin power cable, the latches of power cable and the ATX12V4P match perfectly.

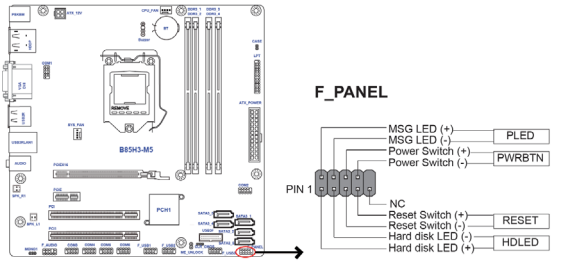
5. SPK_R1 & L1 header

Connect the case speaker cable to **SPK_R & L**.



4. Front Panel Header

The front panel header (F_PANEL) provides a standard set of switch and LED headers commonly found on ATX or Micro ATX cases. Refer to the table below for information:



Hard Drive Activity LED

Connecting pins 1 and 3 to a front panel mounted LED provides visual indication that data is being read from or written to the hard drive. For the LED to function properly, an IDE drive should be connected to the onboard IDE interface. The LED will also show activity for devices connected to the SCSI (hard drive activity LED) connector.

Power/Sleep/Message waiting LED

Connecting pins 2 and 4 to a single or dual-color, front panel mounted LED provides power on/off, sleep, and message waiting indication.

Reset Switch

Supporting the reset function requires connecting pin 5 and 7 to a momentary-contact switch that is normally open. When the switch is closed, the board resets and runs POST.

Power Switch

Supporting the power on/off function requires connecting pins 6 and 8 to a momentary-contact switch that is normally open. The switch should maintain contact for at least 50 ms to signal the power supply to switch on or off. The time requirement is due to internal de-bounce circuitry. After receiving a power on/off signal, at least two seconds elapses before the power supply recognizes another on/off signal.

This concludes Chapter 2. The next chapter covers the BIOS.

Chapter 3
Using BIOS

About the Setup Utility

The computer uses the latest "American Megatrends Inc. " BIOS with support for Windows Plug and Play. The CMOS chip on the motherboard contains the ROM setup instructions for configuring the motherboard BIOS.

The BIOS (Basic Input and Output System) Setup Utility displays the system's configuration status and provides you with options to set system parameters. The parameters are stored in battery-backed-up CMOS RAM that saves this information when the power is turned off. When the system is turned back on, the system is configured with the values you stored in CMOS.

The BIOS Setup Utility enables you to configure:

- Hard drives, diskette drives and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power Management features

The settings made in the Setup Utility affect how the computer performs. Before using the Setup Utility, ensure that you understand the Setup Utility options.

This chapter provides explanations for Setup Utility options.

The Standard Configuration

A standard configuration has already been set in the Setup Utility. However, we recommend that you read this chapter in case you need to make any changes in the future.

This Setup Utility should be used:

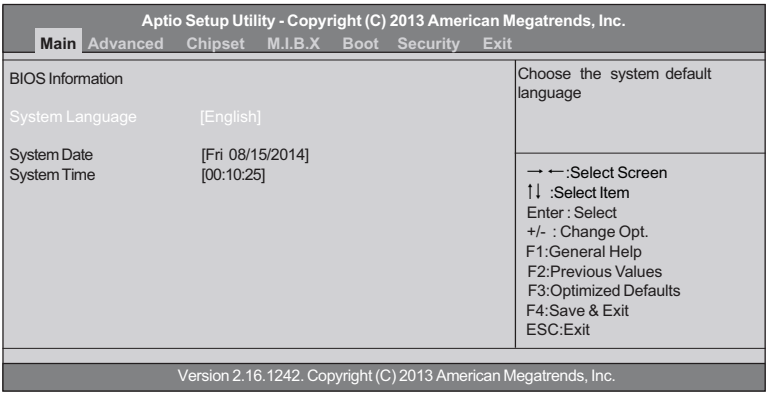
- when changing the system configuration
- when a configuration error is detected and you are prompted to make changes to the Setup Utility
- when trying to resolve IRQ conflicts
- when making changes to the Power Management configuration
- when changing the password or making other changes to the Security Setup

Entering the Setup Utility

When you power on the system, BIOS enters the Power-On Self Test (POST) routines. POST is a series of built-in diagnostics performed by the BIOS. After the POST routines are completed, the following message appears:

Press DEL to enter SETUP

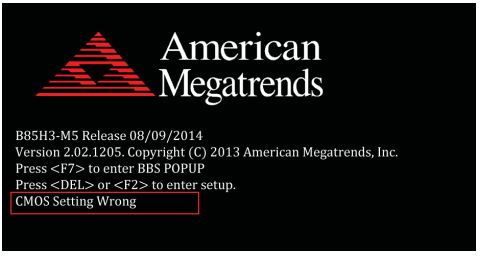
Press the delete key to access BIOS Setup Utility.



Resetting the Default CMOS Values

When powering on for the first time, the POST screen may show a "CMOS Settings Wrong" message. This standard message will appear following a clear CMOS data at factory by the manufacturer. You simply need to Load Default Settings and Save it to reset the default CMOS values.

Note: Changes to system hardware such as different CPU, memories, etc. may also trigger this message.


American Megatrends
B85H3-M5 Release 08/09/2014
Version 2.02.1205. Copyright (C) 2013 American Megatrends, Inc.
Press <F7> to enter BBS POPUP
Press <DEL> or <F2> to enter setup.
CMOS Setting Wrong

Using BIOS

When you start the Setup Utility, the main menu appears. The main menu of the Setup Utility displays a list of the options that are available. A highlight indicates which option is currently selected. Use the cursor arrow keys to move the highlight to other options. When an option is highlighted, execute the option by pressing <Enter>.

Some options lead to pop-up dialog boxes that prompt you to verify that you wish to execute that option. Other options lead to dialog boxes that prompt you for information.

Some options (marked with a triangle ▶) lead to submenus that enable you to change the values for the option. Use the cursor arrow keys to scroll through the items in the submenu.

In this manual, default values are enclosed in parenthesis. Submenu items are denoted by a triangle ▶.

The default BIOS setting for this motherboard apply for most conditions with optimum performance. We do not suggest users change the default values in the BIOS setup and take no responsibility to any damage caused by changing the BIOS settings.

BIOS Navigation Keys

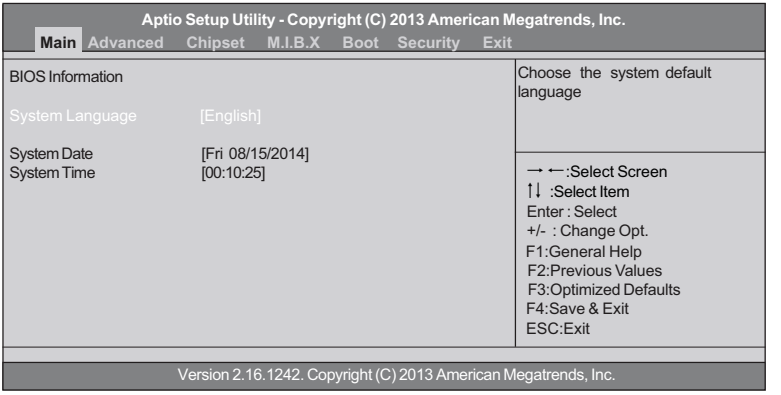
The BIOS navigation keys are listed below:

KEY	FUNCTION
ESC	Exits the current menu
↑↓→←	Scrolls through the items on a menu
+/-	Change Opt.
Enter	Select
F1	General Help
F2	Previous Value
F3	Optimized Defaults
F4	Save & Exit

For the purpose of better product maintenance, the manufacture reserves the right to change the BIOS items presented in this manual. The BIOS setup screens shown in this chapter are for reference only and may differ from the actual BIOS. Please visit the manufacture's website for updated manual.

Main Menu

When you enter the BIOS Setup program, the main menu appears, giving you an overview of the basic system information. Select an item and press <Enter> to display the submenu.



System Language (English)

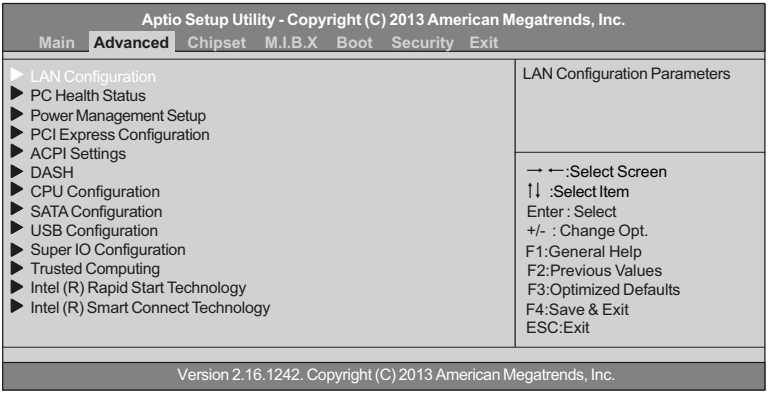
This item is used to set system language.

System Date & Time

The Date and Time items show the current date and time on the computer. If you are running a Windows OS, these items are automatically updated whenever you make changes to the Windows Date and Time Properties utility.

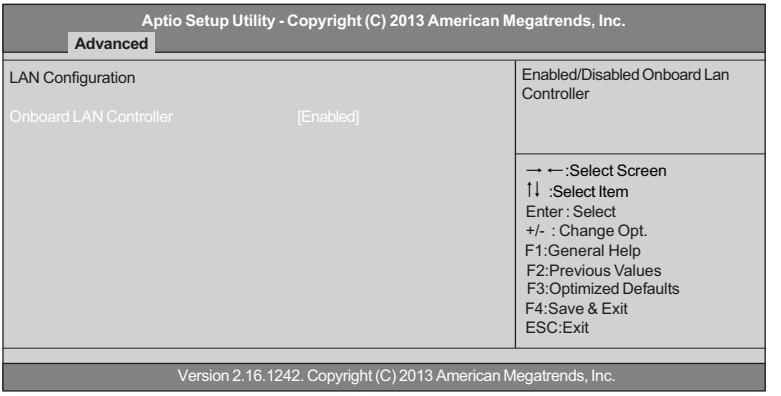
Advanced Menu

The Advanced menu items allow you to change the settings for the CPU and other system.



▶ LAN Configuration

The item in the menu shows the LAN-related information that the BIOS automatically detects.



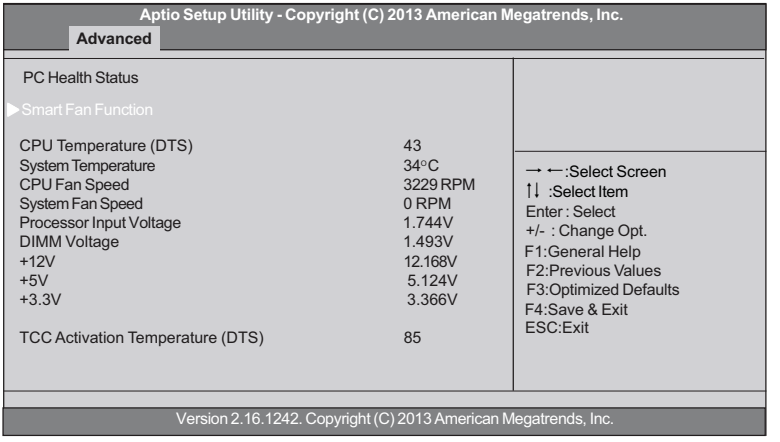
Onboard LAN Controller (Enabled)

Use this item to enable or disable Onboard LAN controller.

Press <Esc> to return to the Advanced Menu page.

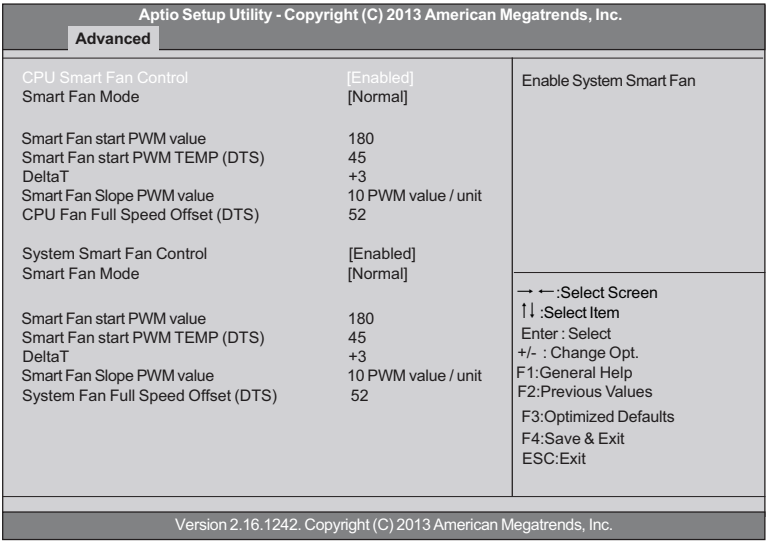
▶ PC Health Status

On motherboards support hardware monitoring, this item lets you monitor the parameters for critical voltages, temperatures and fan speeds.



▶ Smart Fan Function

Scroll to this item and press <Enter> to view the following screen:


Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
Advanced
CPU Smart Fan Control [Enabled]
Smart Fan Mode [Normal]
Smart Fan start PWM value 180
Smart Fan start PWM TEMP (DTS) 45
DeltaT +3
Smart Fan Slope PWM value 10 PWM value / unit
CPU Fan Full Speed Offset (DTS) 52
System Smart Fan Control [Enabled]
Smart Fan Mode [Normal]
Smart Fan start PWM value 180
Smart Fan start PWM TEMP (DTS) 45
DeltaT +3
Smart Fan Slope PWM value 10 PWM value / unit
System Fan Full Speed Offset (DTS) 52
Enable System Smart Fan
→ ←:Select Screen
↑↓ :Select Item
Enter : Select
+/- : Change Opt.
F1:General Help
F2:Previous Values
F3:Optimized Defaults
F4:Save & Exit
ESC:Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

CPU/System Fan Smart Fan Control (Enabled)

These items enable you to define the CPU/system fan by smartly adjusting the CPU/system fan. When it is set at certain temperature, the CPU/system fan PWM value will change accordingly.

Smart Fan Mode (Normal)

This item allows you to select the fan mode (Normal, Quiet, Silent, or Manual) for a better operation environment. If you choose Normal mode, the fan speed will be auto adjusted depending on the CPU temperature. If you choose Quite mode, the fan speed will be auto minimized for quiet environment. If you choose Silent mode, the fan speed will be auto restricted to make system more quietly. If you choose Manual mode, the fan speed will be adjust depending on users' parameters.

Smart Fan start PWM value (180)

This item is used to set the start PWM value of the smart fan.

Smart Fan start PWM TEMP (DTS) (45)

This item is used to set the start temperature of the smart fan.

DeltaT (+3)

This item specifies the range that controls CPU temperature and keeps it from going so high or so low when smart fan works.

Smart Fan Slope PWM value (10 PWM value/unit)

This item is used to set the Slope Select PWM of the smart fan.

CPU Fan/System Fan Full Speed Offset (DTS) (52)

This item is used to set the CPU fan/System fan full speed offset value.

Press <Esc> to return to the PC Health Status page.

System Component Characteristics

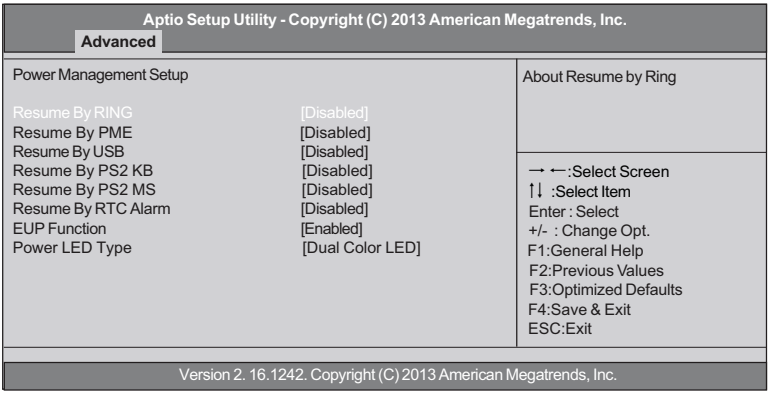
These items display the monitoring of the overall inboard hardware health events, such as System temperature, CPU & DIMM voltage, CPU & System fan speed... etc.

- CPU Temperature
- System Temperature
- CPU Fan Speed
- System Fan Speed
- Processor Input Voltage
- DIMM Voltage
- +12V
- +5V
- +3.3V

Press <Esc> to return to the Advanced Menu page.

▸Power Management Setup

This page sets up some parameters for system power management operation.



Resume By RING (Disabled)

The system can be tured off with a software command. If you enable this item, the system can automatically resume if there is an incoming call on the modem. You must use an ATX power supply in order to use this feature.

Resume By PME (Disabled)

This item specify whether the system will be awakened from power saving modes when activity or input signal of the specified hardware peripheral or components is detected.

Resume By USB (Disabled)

This item allows you to enable/disable the USB device wakeup function from S3 mode.

Resume By PS2 KB (Disabled)

This item enables or disables you to allow keyboard activity to awaken the system from power saving mode.

Resume By PS2 MS (Disabled)

This item enables or disables you to allow mouse activity to awaken the system from power saving mode.

Resume By RTC Alarm (Disabled)

The system can be turned off with a software command. If you enable this item, the system can automatically resume at a fixed time based on the system's RTC (realtime clock). Use the items below this one to set the date and time of the wake-up alarm. You must use an ATX power supply in order to use this feature.

EUP Function (Enabled)

This item allows user to enable or disable EUP support.

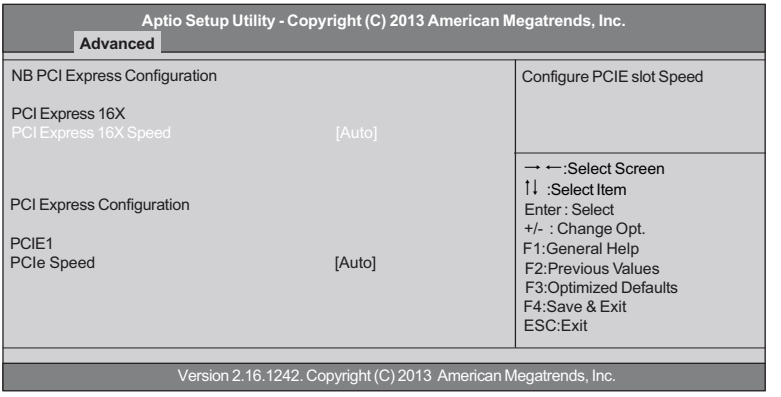
Power LED Type (Dual Color LED)

This item shows the type of the power LED.

Press <Esc> to return to the Advanced Menu page.

► PCI Express Configuration

This page sets up PCI Express configuration.



PCI Express 16X Speed (Auto)

This item allows you to set the PCIe X16 speed.

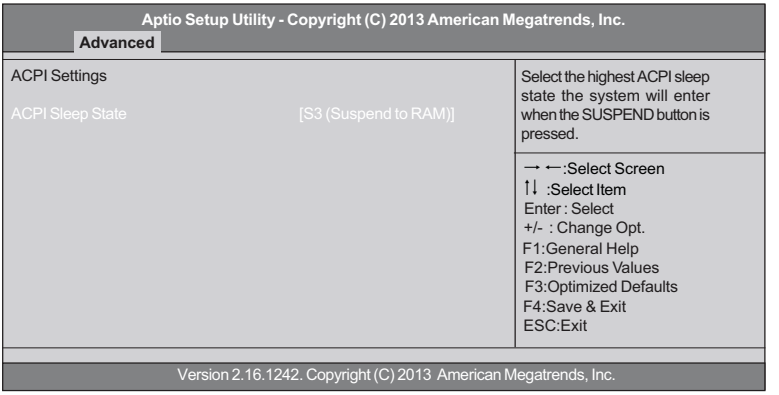
PCIE1 PCIe Speed (Auto)

This item enables you to set the PCI Express speed.

Press <Esc> to return to the Advanced Menu page.

▶ACPI Configuration

The item in the menu shows the highest ACPI sleep state when the system enters suspend.


Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
Advanced
ACPI Settings
ACPI Sleep State
[S3 (Suspend to RAM)]
Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.
→ ←:Select Screen
↑↓ :Select Item
Enter : Select
+/- : Change Opt.
F1:General Help
F2:Previous Values
F3:Optimized Defaults
F4:Save & Exit
ESC:Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

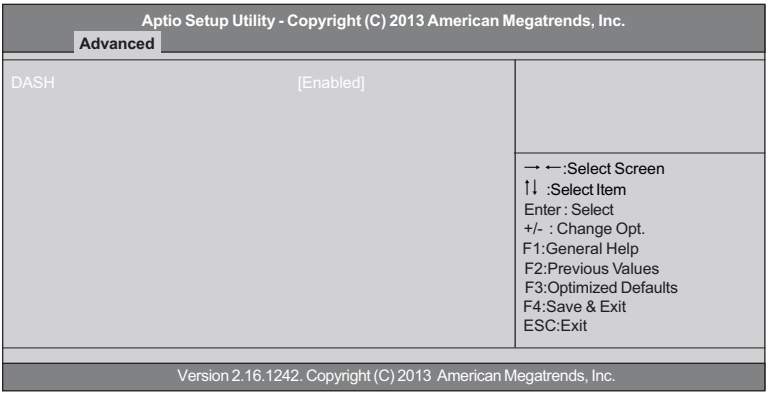
ACPI Sleep State [S3(Suspend to RAM)]

This item allows user to enter the ACPI S3 (Suspend to RAM) Sleep State (default).

Press <Esc> to return to the Advanced Menu page.

▶DASH

The item in the menu shows the highest ACPI sleep state when the system enters suspend.



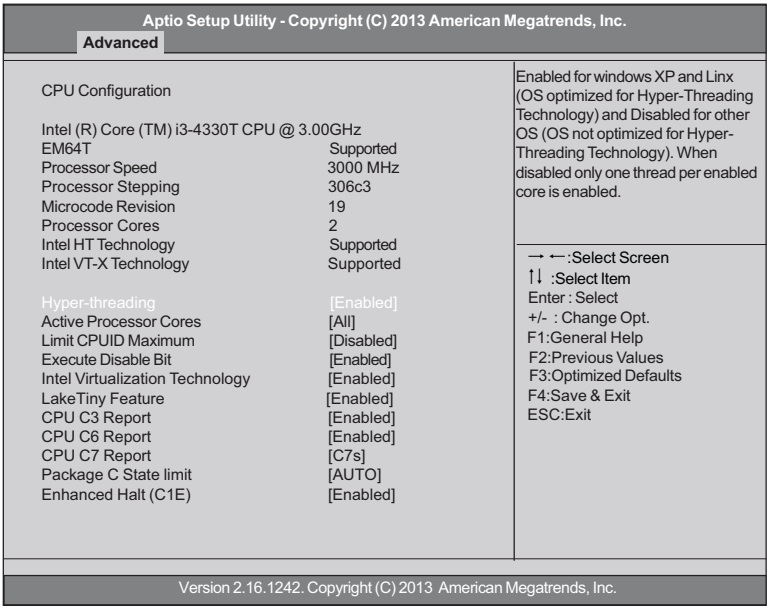
DASH [Enabled]

This item enables or disables the DASH function of LOM (Lan on motherboard)

Press <Esc> to return to the Advanced Menu page.

▶CPU Configuration

The item in the menu shows the CPU Configuration.


Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
Advanced
CPU Configuration
Intel (R) Core (TM) i3-4330T CPU @ 3.00GHz
EM64T Supported
Processor Speed 3000 MHz
Processor Stepping 306c3
Microcode Revision 19
Processor Cores 2
Intel HT Technology Supported
Intel VT-X Technology Supported
Hyper-threading [Enabled]
Active Processor Cores [All]
Limit CPUID Maximum [Disabled]
Execute Disable Bit [Enabled]
Intel Virtualization Technology [Enabled]
LakeTiny Feature [Enabled]
CPU C3 Report [Enabled]
CPU C6 Report [Enabled]
CPU C7 Report [C7s]
Package C State limit [AUTO]
Enhanced Halt (C1E) [Enabled]
Enabled for windows XP and Linx (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology). When disabled only one thread per enabled core is enabled.
→ ←:Select Screen
↑↓ :Select Item
Enter : Select
+/- : Change Opt.
F1:General Help
F2:Previous Values
F3:Optimized Defaults
F4:Save & Exit
ESC:Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

Intel (R) Core (TM) i3-4330T CPU @3.00GHz

This is display field and displays the information of the CPU installed in your computer.

EM64T (Supported)

This item shows the computer supports EM64T.

Processor Speed (3000MHz)

This item shows the current processor speed.

Processor Stepping (306c3)

This item shows the processor stepping revision.

Microcode Revision (19)

This item shows the Microcode revision.

Processor Cores (2)

This item shows the core number of the processor.

Intel HT Technology (Supported)

This item shows the computer supports Intel HT Technology.

Intel VT-X Technology (Supported)

This item shows the computer supports Intel VT-X Technology.

Hyper-threading (Enabled)

This item only available when the chipset supports Hyper-threading and you are using a Hyper-threading CPU.

Active Processor Cores (All)

Use this item to control the number of active processor cores.

Limit CPUID Maximum (Disabled)

Use this item to enable or disable the maximum CPUID value limit, you can enable this item to prevent the system from “rebooting” when trying to install Windows NT4.0.

Execute Disabled Bit (Enabled)

This item allows the processor to classify areas in memory by where application code can excute and where in cannot. When a malicious worm attempts to insert code in the buffer, the processor disables code excution, preventing damage or worm propagation. Replacing older computers with Excute Disable Bit enabled systems can halt worm attacks, reducing the need for virus related repair.

Intel Vitualization Technology (Enabled)

When disabled, a VMM cannot utilize the additional hardware capabilities provided by Vandor Pool Technology.

LakeTiny Feature (Enabled)

Use this item to enable or disable the LakeTiny for C state configuration.

CPU C3 Report (Enabled)

Use this item to enable or disable CPU C3 (ACPI C2) report to OS.

CPU C6 Report (Enabled)

Use this item to enable or disable CPU C6 (ACPI C3) report to OS.

CPU C7 Report (C7s)

Use this item to enable or disable CPU C7 report to OS.

Package C State limit (AUTO)

Use this item to set package C state limit.

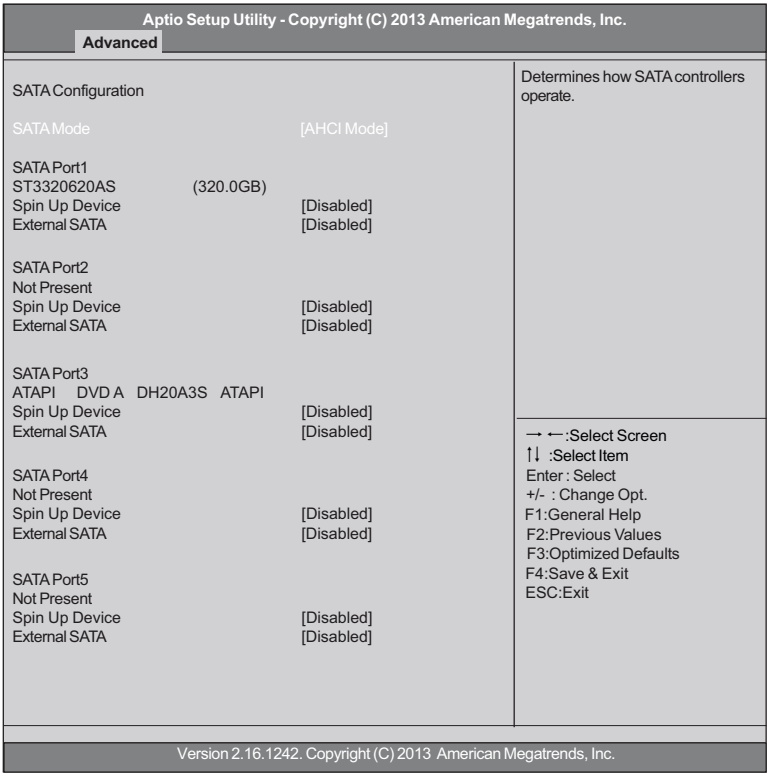
Enhanced Halt (C1E)

Use this item to enable or disable the Enhanced C1 state.

Press <Esc> to return to the Advanced Menu page.

▶SATA Configuration

Use this item to show the mode of serial SATA configuration options.



SATA Mode (AHCI Mode)

Use this item to select SATA mode.

SATA Port1~5 (Not Present)

This motherboard supports five SATA channels and each channel allows one SATA device to be installed. Use these items to configure each device on the SATA channel.

Spin up Device (Disabled)

On an edge detect from 0 to 1, the PCH starts a COMRESET inization sequence to the device.

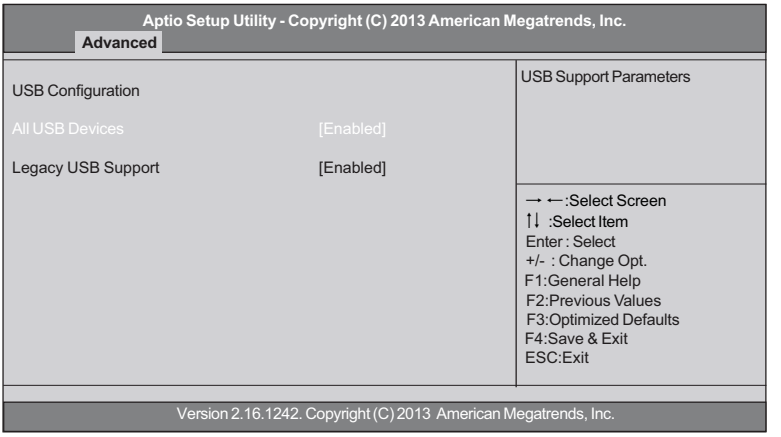
External SATA (Disabled)

Use this item to enable or disable External SATA Support.

Press <Esc> to return to the Advanced Menu page.

▶ USB Configuration

Use this item to show the information of USB configuration.



All USB Devices (Enabled)

Use this item to enable or disable all USB devices.

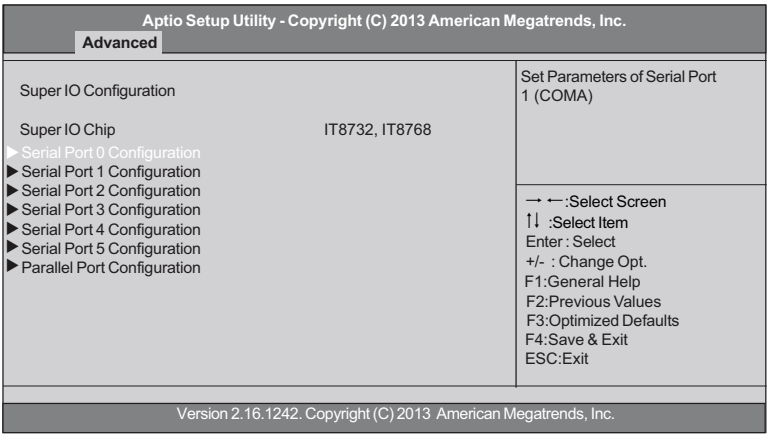
Legacy USB Support (Enabled)

Use this item to enable or disable support for legacy USB devices.

Press <Esc> to return to the Advanced Menu page.

► Super IO Configuration

Use this item to show the information of Super IO configuration.

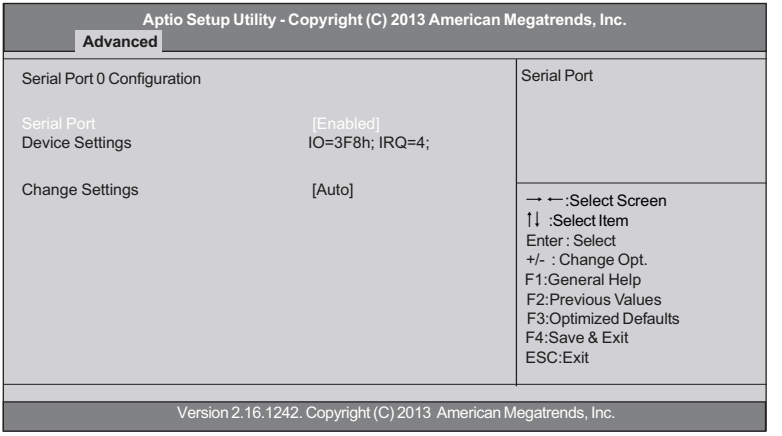

Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
Advanced
Super IO Configuration
Super IO Chip IT8732, IT8768
▶ Serial Port 0 Configuration
▶ Serial Port 1 Configuration
▶ Serial Port 2 Configuration
▶ Serial Port 3 Configuration
▶ Serial Port 4 Configuration
▶ Serial Port 5 Configuration
▶ Parallel Port Configuration
Set Parameters of Serial Port 1 (COMA)
→ ←:Select Screen
↑↓ :Select Item
Enter : Select
+/- : Change Opt.
F1:General Help
F2:Previous Values
F3:Optimized Defaults
F4:Save & Exit
ESC:Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

Super IO Chip (IT8732, IT8768)

This item shows the information of the super IO chip.

► Serial Port 0 Configuration

Scroll to this item and press <Enter> to view the following screen:



Serial Port (Enabled)

This item allows you to enable or disable serial port.

Device Settings (IO=3F8h; IRQ=4)

This item shows the information of the device settings.

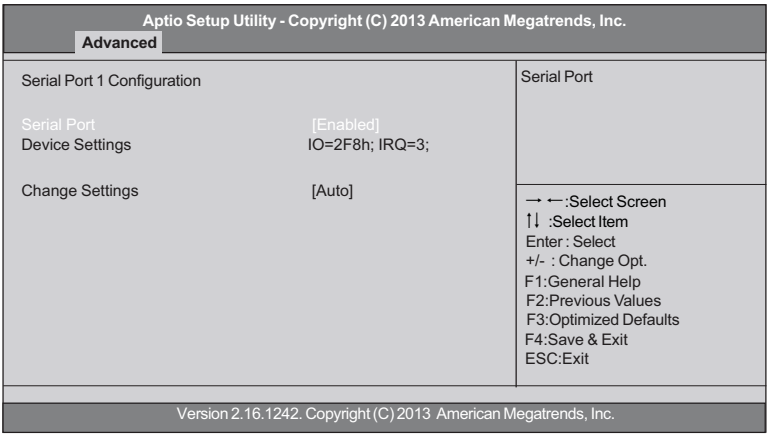
Change Settings (Auto)

Use this item to change device settings.

Press <Esc> to return to the Super IO Configuration page.

► **Serial Port 1 Configuration**

Scroll to this item and press <Enter> to view the following screen:



Serial Port (Enabled)

This item allows you to enable or disable serial port.

Device Settings (IO=2F8h; IRQ=3)

This item shows the information of the device settings.

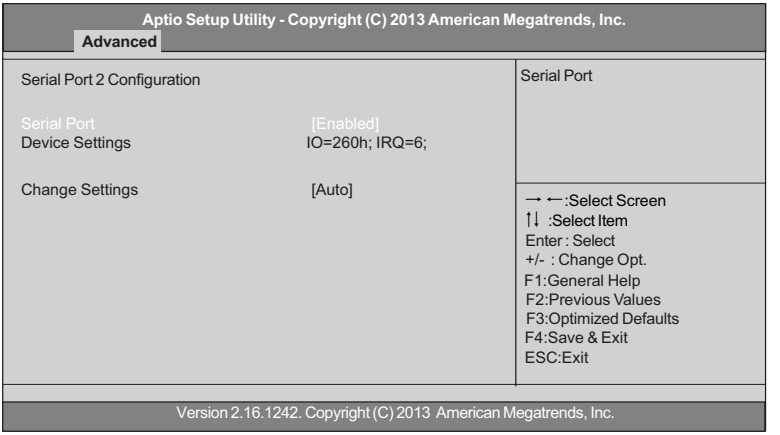
Change Settings (Auto)

Use this item to change device settings.

Press <Esc> to return to the Super IO Configuration page.

► **Serial Port 2 Configuration**

Scroll to this item and press <Enter> to view the following screen:



Serial Port (Enabled)

This item allows you to enable or disable serial port.

Device Settings (IO=260h; IRQ=6)

This item shows the information of the device settings.

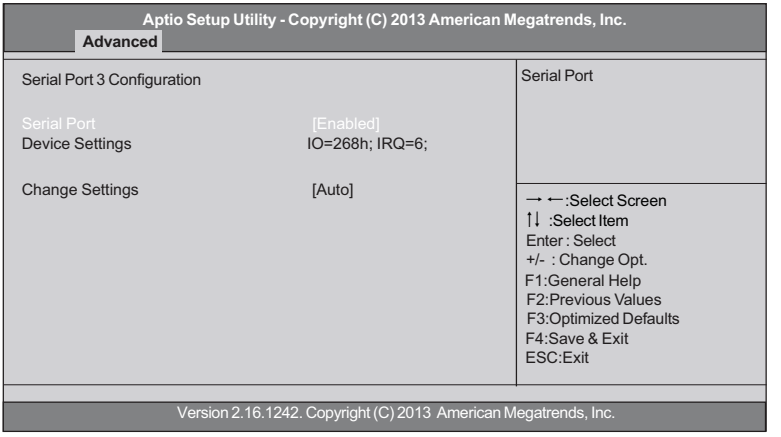
Change Settings (Auto)

Use this item to change device settings.

Press <Esc> to return to the Super IO Configuration page.

► **Serial Port 3 Configuration**

Scroll to this item and press <Enter> to view the following screen:



Serial Port (Enabled)

This item allows you to enable or disable serial port.

Device Settings (IO=268h; IRQ=6)

This item shows the information of the device settings.

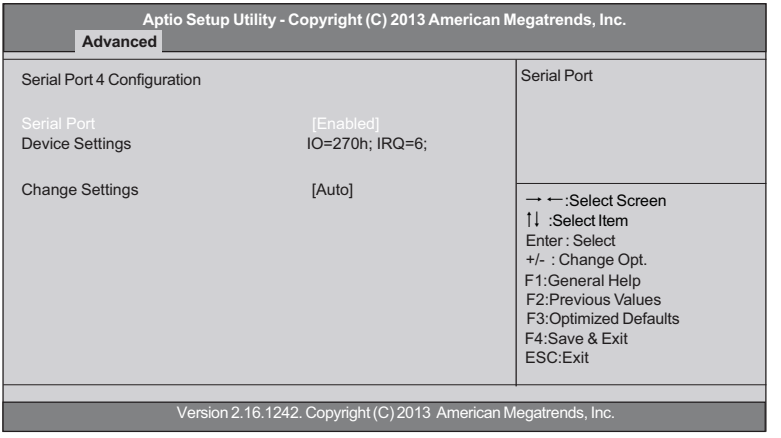
Change Settings (Auto)

Use this item to change device settings.

Press <Esc> to return to the Super IO Configuration page.

► **Serial Port 4 Configuration**

Scroll to this item and press <Enter> to view the following screen:



Serial Port (Enabled)

This item allows you to enable or disable serial port.

Device Settings (IO=3F8h; IRQ=4)

This item shows the information of the device settings.

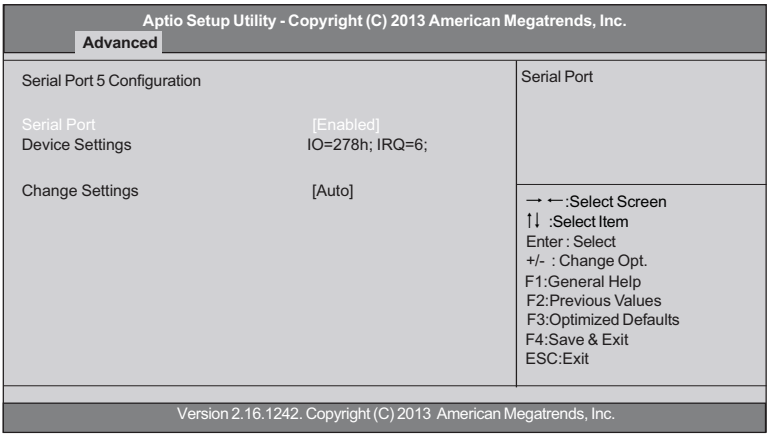
Change Settings (Auto)

Use this item to change device settings.

Press <Esc> to return to the Super IO Configuration page.

► **Serial Port 5 Configuration**

Scroll to this item and press <Enter> to view the following screen:



Serial Port (Enabled)

This item allows you to enable or disable serial port.

Device Settings (IO=3F8h; IRQ=4)

This item shows the information of the device settings.

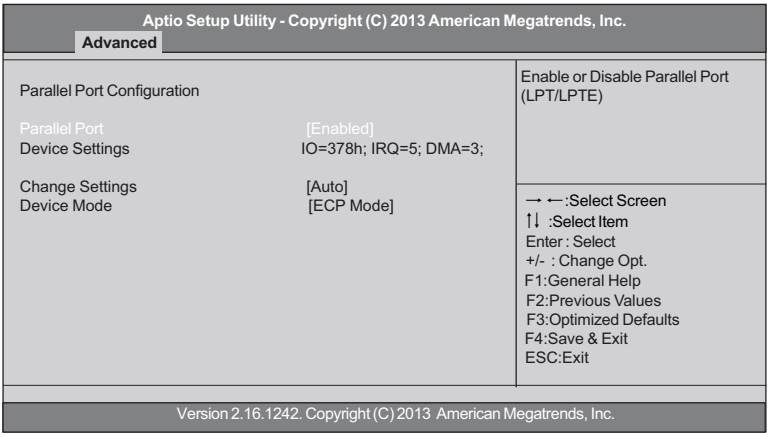
Change Settings (Auto)

Use this item to change device settings.

Press <Esc> to return to the Super IO Configuration page.

▶ **Parallel Port Configuration**

Scroll to this item and press <Enter> to view the following screen:



Parallel Port (Enabled)

This item allows you to enable or disable parallel port.

Device Settings (IO=378h; IRQ=5; DMA=3;)

This item shows the information of the device settings.

Change Settings (Auto)

Use this item change device settings.

Device Mode (ECP Mode)

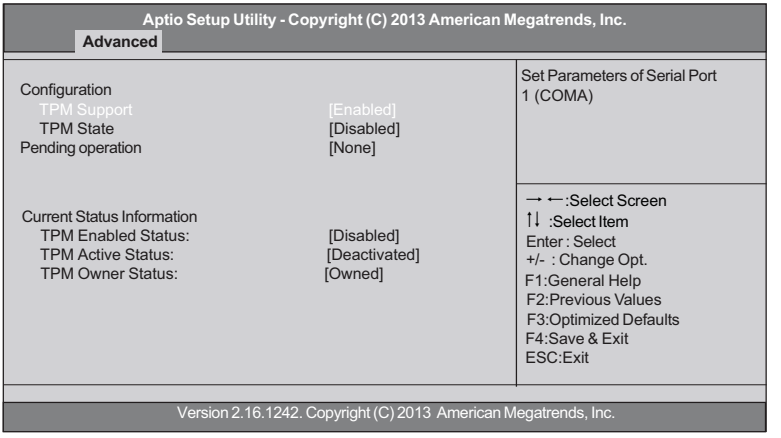
This item shows the information of the device mode.

Press <Esc> to return to the Super IO Configuration page.

Press <Esc> to return to the Advanced Menu page.

► Trusted Computing

Use this item to show the information of trusted computing configuration.



TPM Support (Enabled)

Use this item to enable or disable the TPM support. OSwill not show TPM. Reset of platform is required.

TPM State (Disabled)

Use this item to enable or disable the security device.

TPM Enabled Status (Disabled)

This item displays the TPM status to be enabled or not.

TPM Actived Status (Deactived)

This item displays the TPM status to be actived or not.

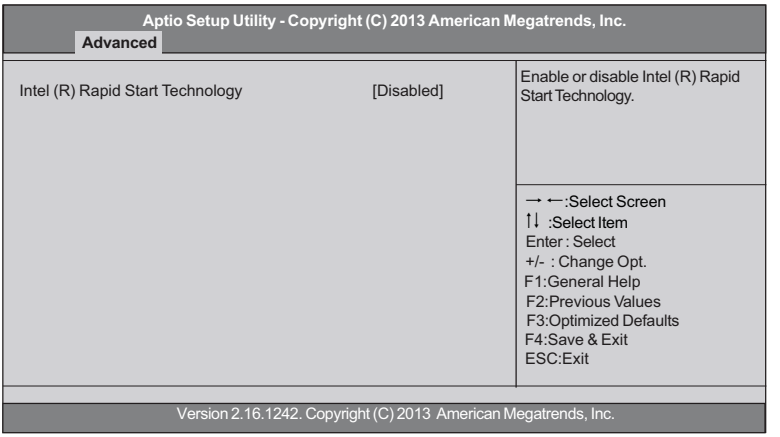
TPM Owner Status (Owned)

This item displays the TPM status to be owned or not.

Press <Esc> to return to the Advanced Menu page.

▶ Intel (R) Rapid Start Technology

Use this item to show the information of Intel (R) Rapid Start Technology.



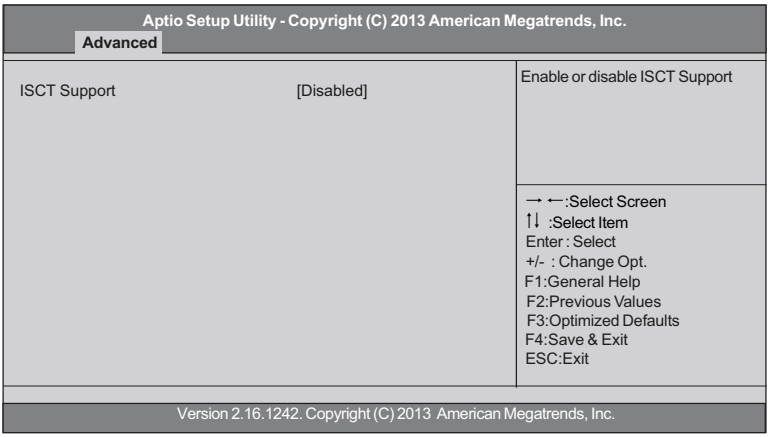
Intel (R) Rapid Start Technology (Disabled)

Use this item to enable or disable the Intel (R) Rapid Start Technology.

Press <Esc> to return to the Advanced Menu page.

▶ Intel (R) Smart Connect Technology

Use this item to show the information of Intel (R) Smart Connect Technology.



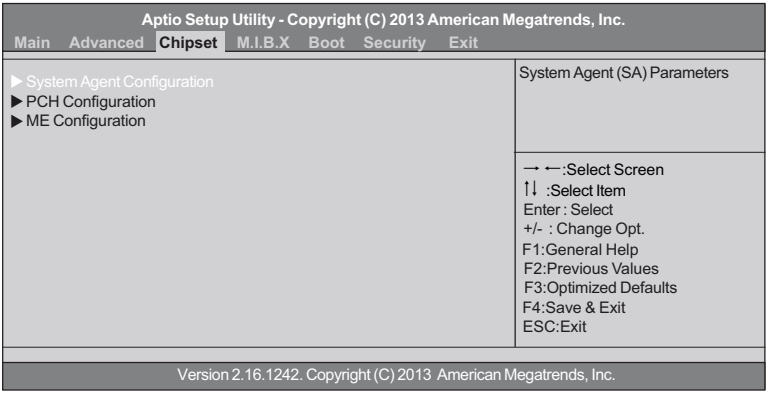
Intel (R) Smart Connect Technology (Disabled)

Use this item to enable or disable the Intel (R) Smart Connect Technology.

Press <Esc> to return to the Advanced Menu page.

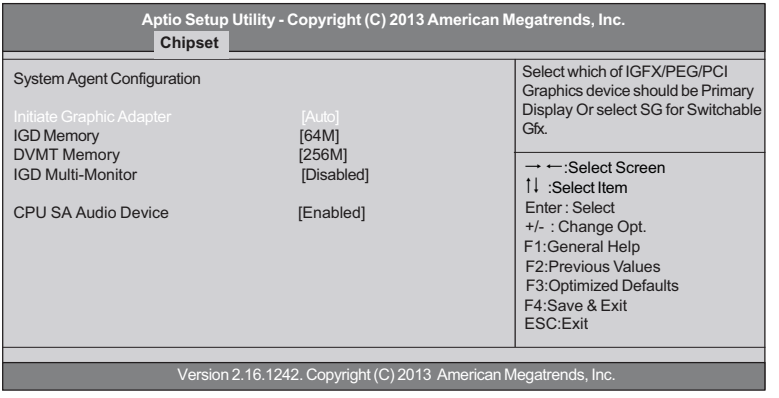
Chipset Menu

The chipset menu items allow you to change the settings for the SoC chip and other system.



▶System Agent Configuration

Scroll to this item and press <Enter> and view the following screen:


Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
Chipset
System Agent Configuration
Initiate Graphic Adapter [Auto]
IGD Memory [64M]
DVMT Memory [256M]
IGD Multi-Monitor [Disabled]
CPU SA Audio Device [Enabled]
Select which of IGFX/PEG/PCI Graphics device should be Primary Display Or select SG for Switchable Gfx.
→ ←:Select Screen
↑↓ :Select Item
Enter : Select
+/- : Change Opt.
F1:General Help
F2:Previous Values
F3:Optimized Defaults
F4:Save & Exit
ESC:Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

Initiate Graphic Adapter (Auto)

This item allows you to select graphics controller to use as the primary boot device.

IGD Memory (64M)

This item shows the information of the IGD (Internal Graphics Device) memory.

DVMT Memory (256M)

When set to Fixed Mode, the graphics driver will reserve a fixed positon of the system memory as graphics memory, according to system and graphics equirements.

IGD Multi-Monitor (Disabled)

This item allows you to enable or disable the IGD Multi-Monitor.

CPU SA Audio Device (Enabled)

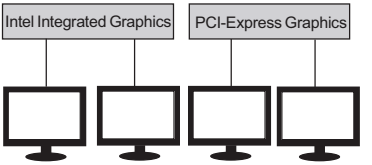
This item allows you to enable or disable the CPU SA Audio device.

Press <Esc> to return to the Chipset Menu page.

Multi-Monitor technology

Multi-Monitor technology can help you to increase the area available for programs running on a single computer system through using multiple display devices.

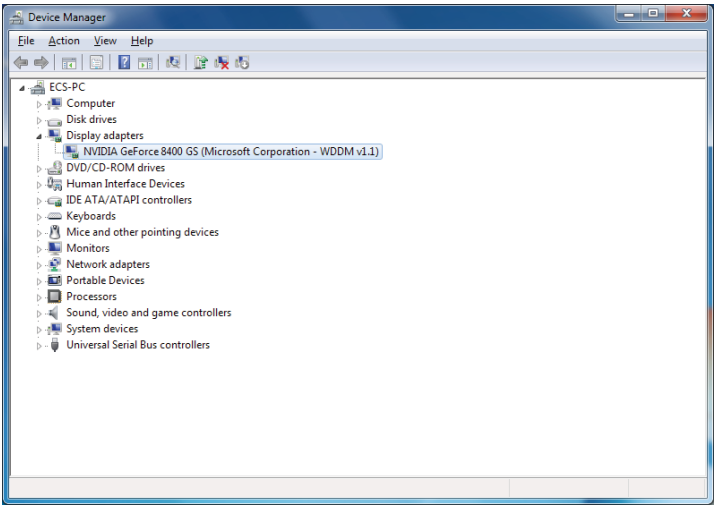
It is not only to increase larger screen viewing but also to improving personal productivity.



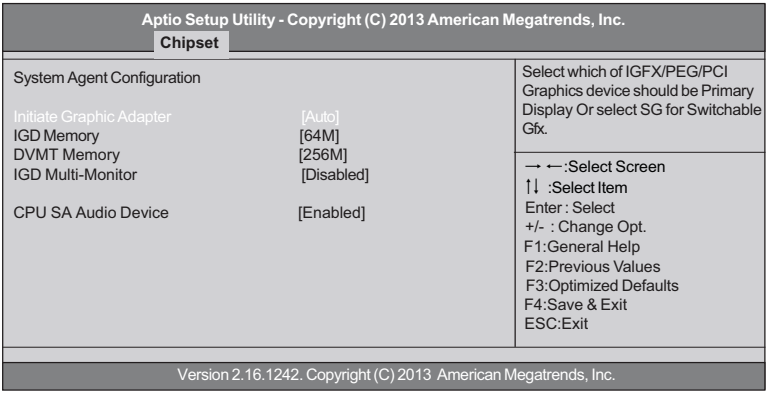
Please note that Multi-Monitor technology supports up to four monitors: one or two Intel integrated Graphics and one or two PCI-Express graphics devices under Windows 7/8.

Step 1. Insert ECS drives DVD to run Auto setup or browse the DVD to install Intel chipset drivers, VGA and sound drivers.(If you want know the detail information, please refer to chapter 4.)

Step 2. Install all the drivers of PCI-Express graphic cards. Click the Browse CD item, then appears the following screen. Select the driver you want to install(e.g NVIDIA GeForce 8400 GS(Microsoft Corporation-WDDM v1.1)) and double click it.

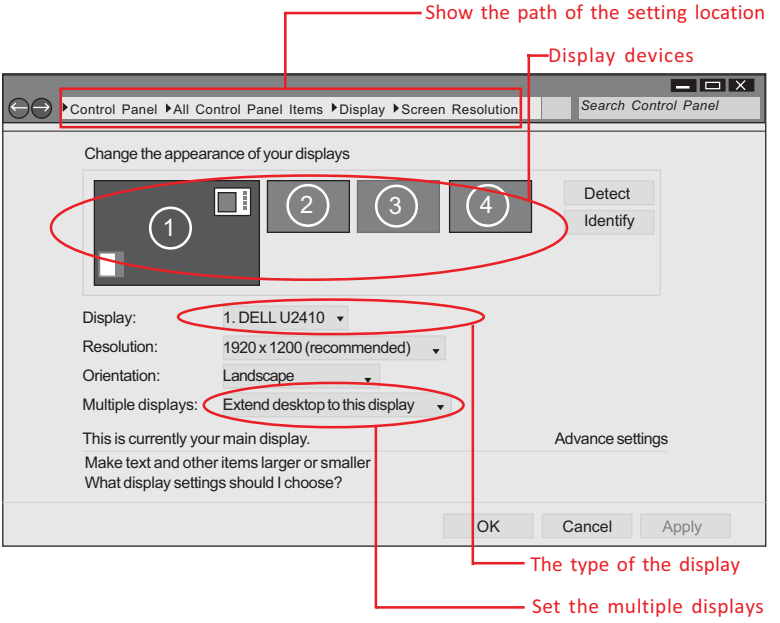


Step 3. Enable IGD Multi-Monitor from BIOS. In the following BIOS screen, please set IGD Multi-Monitor to [Enabled].

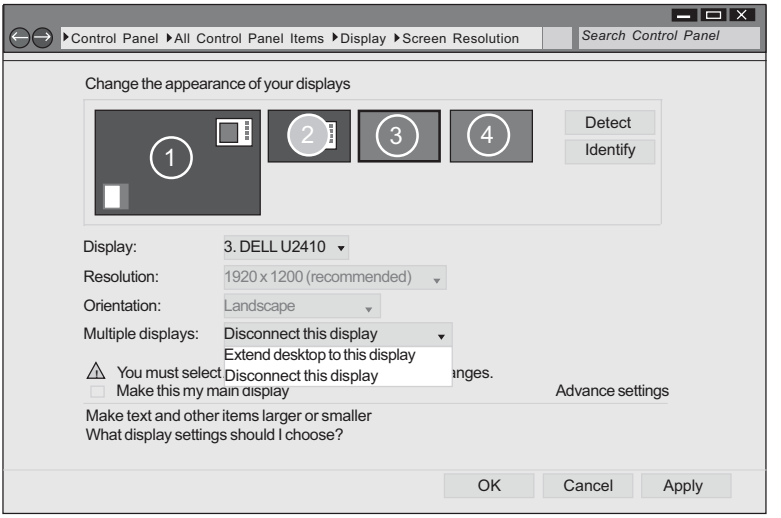

Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
Chipset
System Agent Configuration
Initiate Graphic Adapter [Auto]
IGD Memory [64M]
DVMT Memory [256M]
IGD Multi-Monitor [Disabled]
CPU SA Audio Device [Enabled]
Select which of IGFX/PEG/PCI Graphics device should be Primary Display Or select SG for Switchable Gfx.
→ ←:Select Screen
↑↓ :Select Item
Enter : Select
+/- : Change Opt.
F1:General Help
F2:Previous Values
F3:Optimized Defaults
F4:Save & Exit
ESC:Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

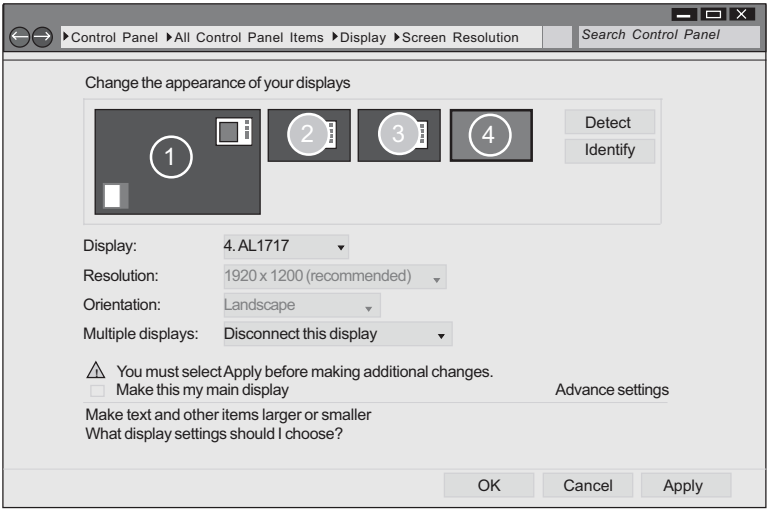
Step 4. Change the appearance of your displays under Windows 7/8.

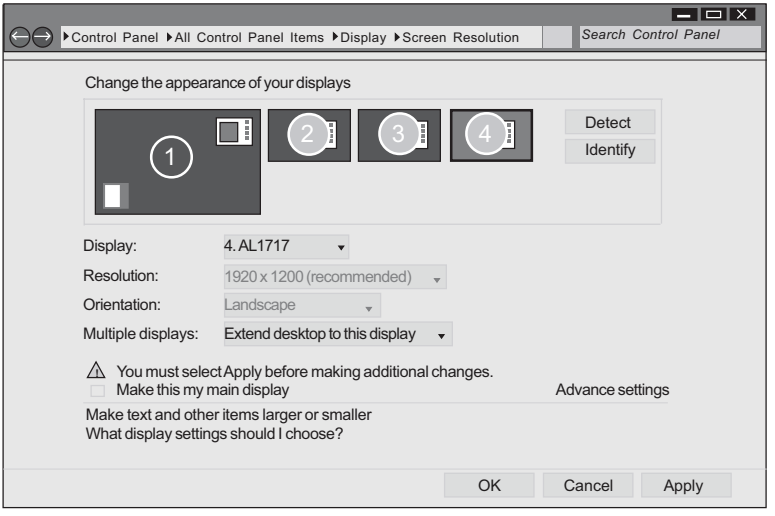
1. Enter the Control Panel menu, select the Display in the All Control Panel Items and click the Screen Resolution, then appears the following screen.



2.Select display devices, set the multiple displays option and to extend desktop for display “Multi-Monitor technology”.

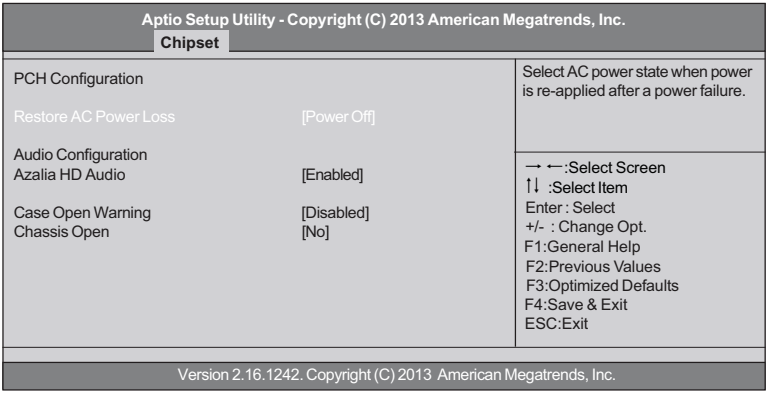



Control Panel ▸ All Control Panel Items ▸ Display ▸ Screen Resolution
Search Control Panel
Change the appearance of your displays
1
2
3
4
Detect
Identify
Display: 4. AL1717
Resolution: 1920 x 1200 (recommended)
Orientation: Landscape
Multiple displays: Disconnect this display
You must select Apply before making additional changes.
Make this my main display
Advance settings
Make text and other items larger or smaller
What display settings should I choose?
OK
Cancel
Apply


Control Panel ▸ All Control Panel Items ▸ Display ▸ Screen Resolution
Search Control Panel
Change the appearance of your displays
1
2
3
4
Detect
Identify
Display: 4. AL1717
Resolution: 1920 x 1200 (recommended)
Orientation: Landscape
Multiple displays: Extend desktop to this display
You must select Apply before making additional changes.
Make this my main display
Advance settings
Make text and other items larger or smaller
What display settings should I choose?
OK
Cancel
Apply

▸PCH Configuration

Scroll to this item and press <Enter> to view the following screen:



Restore AC Power Loss (Power Off)

This item enables your computer to automatically restart or return to its operating status.

Azalia HD Audio (Enabled)

This item enables or disables Azalia HD audio.

Case Open Warning (Disabled)

This item enables or disables the warning if the case is opened up, and the item below indicates the current status of the case.

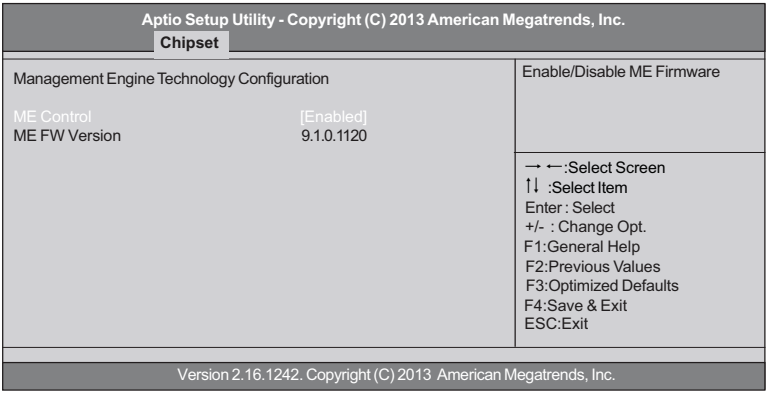
Chassis Opened (No)

This item indicates whether the case has been opened.

Press <Esc> to return to the Chipset Menu page.

▶ME Configuration

Scroll to this item and press <Enter> to view the following screen:



ME Control (Enabled)

Use this item to enable or disable the ME Firmware.

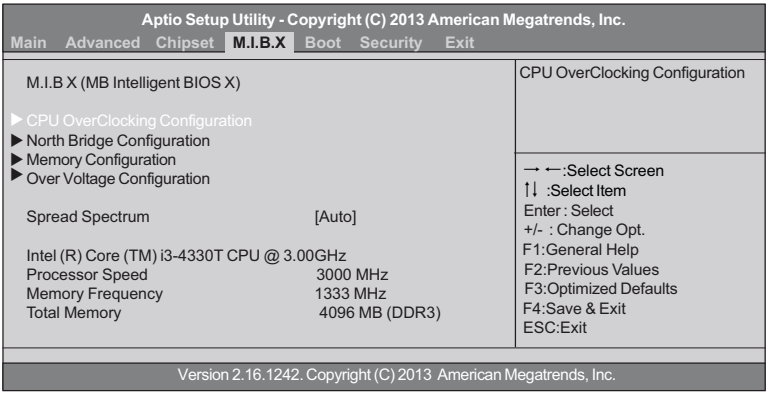
ME FW Version (9.1.0.1120)

This item shows the ME FW version.

Press <Esc> to return to the Chipset Menu page.

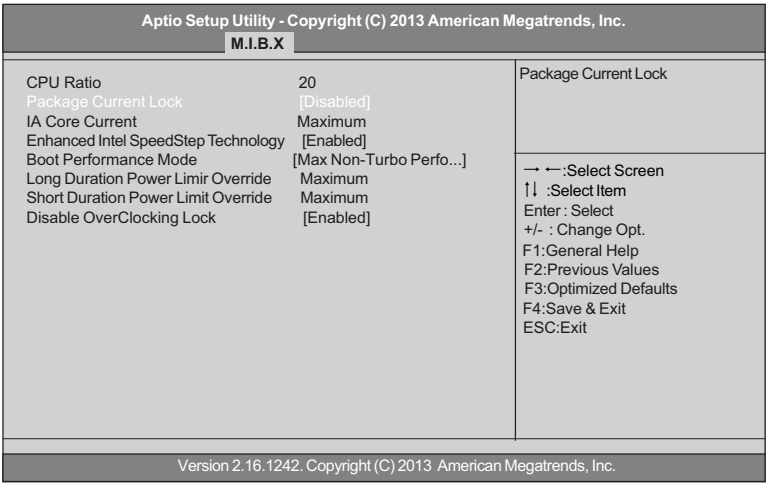
M.I.B. X(MB Intelligent BIOS X) Menu

This page enables you to set the clock speed and system bus for your system. The clock speed and system bus are determined by the kind of processor you have installed in your system.


Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
Main Advanced Chipset M.I.B.X Boot Security Exit
M.I.B X (MB Intelligent BIOS X)
▶ CPU OverClocking Configuration
▶ North Bridge Configuration
▶ Memory Configuration
▶ Over Voltage Configuration
Spread Spectrum [Auto]
Intel (R) Core (TM) i3-4330T CPU @ 3.00GHz
Processor Speed 3000 MHz
Memory Frequency 1333 MHz
Total Memory 4096 MB (DDR3)
CPU OverClocking Configuration
→ ←:Select Screen
↑↓ :Select Item
Enter : Select
+/- : Change Opt.
F1:General Help
F2:Previous Values
F3:Optimized Defaults
F4:Save & Exit
ESC:Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

▶CPU OverClocking Configuration

Scroll to this item to view the following screen:


Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
M.I.B.X
CPU Ratio 20
Package Current Lock [Disabled]
IA Core Current Maximum
Enhanced Intel SpeedStep Technology [Enabled]
Boot Performance Mode [Max Non-Turbo Perfo...]
Long Duration Power Limir Override Maximum
Short Duration Power Limit Override Maximum
Disable OverClocking Lock [Enabled]
Package Current Lock
→ ←:Select Screen
↑↓ :Select Item
Enter : Select
+/- : Change Opt.
F1:General Help
F2:Previous Values
F3:Optimized Defaults
F4:Save & Exit
ESC:Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

CPU Ratio (20)

This item allows users to control non turbo CPU ratio.

Package Current Lock (Disabled)

This item allows you to enable or disable the package current lock.

IA Core Current (Maximum)

This item allows you to set IA Core Current Max.

Enhanced Intel SpeedStep Technology (Enabled)

This item allows users to enable or disable the EIST (Enhanced Intel SpeedStep Technology).

Boot performance mode (Max Non-Turbo Perfor...)

Use this item to select the performance state that the BIOS will set before OS handoff.

Long Duration Power Limit Override (Maximum)

Intel(R) Turbo Boost Technology will use this power limit during the long duration power limit time window.

Short Duration Power Limit Override (Maximum)

Intel(R) Turbo Boost Technology will use this power limit for a very short duration. After that, the long duration power limit will be honored.

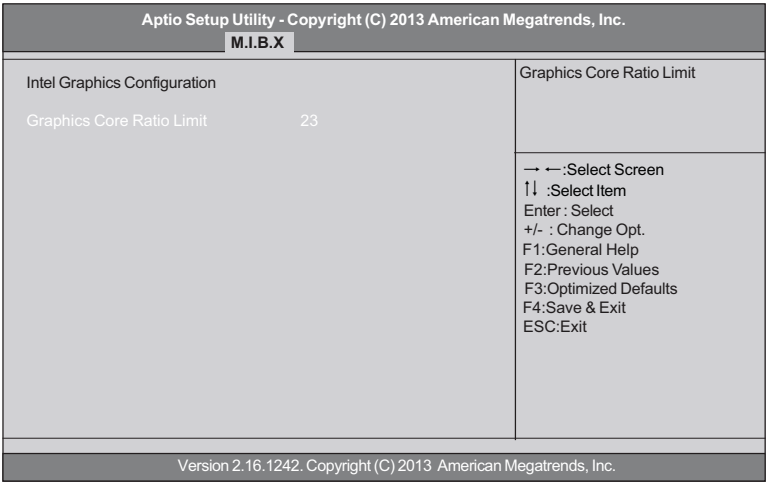
Disable OverClocking Lock (Enabled)

This item allows you to control the OverClocking lock.

Press <Esc> to return to the M.I.B. X Menu page.

▶North Bridge Configuration

Scroll to this item to view the following screen:



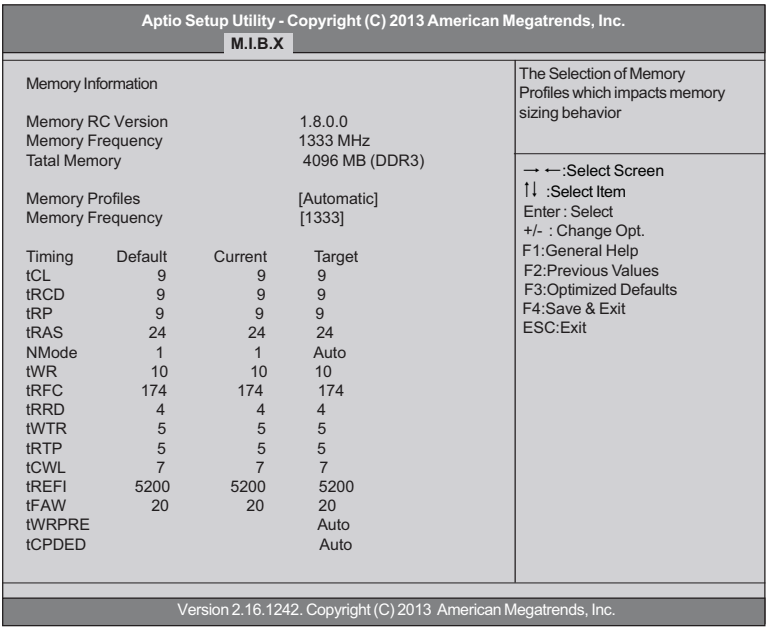
Graphics Core Ratio Limit (23)

This item allows you to control the internal GFX core ratio.

Press <Esc> to return to the M.I.B. X Menu page.

▸Memory Configuration

Scroll to this item to view the following screen:



Memory RC Version (1.8.0.0)

This item shows the information of the memory RC version.

Memory Frequency (1333 Mhz)

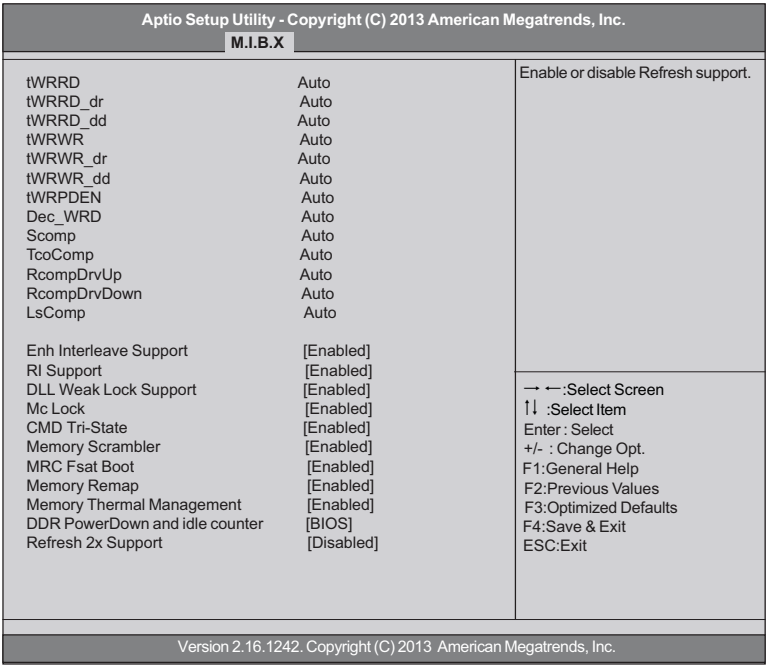
This item shows the information of the memory frequency.

Total Memory (4096 MB (DDR3))

This item shows the information of the total memory.

Memory Profiles (Automatic)

This item enables you to set the memory profiles. The selection of memory profiles impacts memory sizing behavior.



Enh Interleave Support (Enabled)

This item allows you to enable or disable the Enh Interleave support.

RI Support (Enabled)

This item allows you to enable or disable the Rank Interleave support. NOTE: RI and HORI can not be enabled at the same time.

DLL Weak Lock Support (Enabled)

This item allows you to enable or disable the DLL weak lock support.

Mc Lock (Enabled)

This item allows you to enable or disable capacity to lock MC registers or not.

CMD Tri-State (Enabled)

This item allows you to enable or disable the CMD Tri-State (ending of the training).

Memory Scrambler (Enabled)

This item allows you to enable or disable the memory scrambler.

WRC Fast Boot (Enabled)

This item allows you to enable or disable the WRC fast boot.

Memory Remap (Enabled)

This item allows you to enable or disable the memory remap above 4G.

Memory Thermal Management (Enabled)

This item allows you to enable or disable the memory thermal management.

DDR PowerDown and Idle counter (BIOS)

This item allows you to BIOS or PCODE the DDR Power Down and Idle counter. BIOS: BIOS is in countrol of DDR CKE mode and idle timer value. PCODE: pcode will manage the modes.

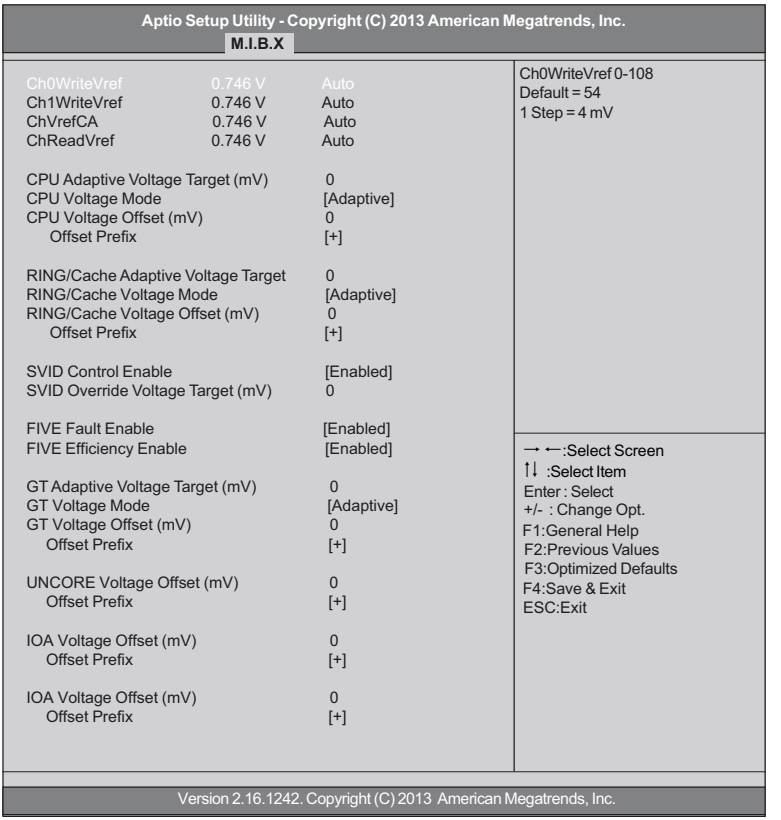
Refresh 2x Support (Disabled)

This item allows you to enable or disable 2xRef when warm and Hot 2-iMC enables 2xRef when Hot.

Press <Esc> to return to the M.I.B. X Menu page.

▶Over Voltage Configuration

Scroll to this item to view the following screen:


Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
M.I.B.X
Ch0WriteVref 0.746 V Auto
Ch1WriteVref 0.746 V Auto
ChVrefCA 0.746 V Auto
ChReadVref 0.746 V Auto
CPU Adaptive Voltage Target (mV) 0
CPU Voltage Mode [Adaptive]
CPU Voltage Offset (mV) 0
Offset Prefix [+]
RING/Cache Adaptive Voltage Target 0
RING/Cache Voltage Mode [Adaptive]
RING/Cache Voltage Offset (mV) 0
Offset Prefix [+]
SVID Control Enable [Enabled]
SVID Override Voltage Target (mV) 0
FIVE Fault Enable [Enabled]
FIVE Efficiency Enable [Enabled]
GT Adaptive Voltage Target (mV) 0
GT Voltage Mode [Adaptive]
GT Voltage Offset (mV) 0
Offset Prefix [+]
UNCORE Voltage Offset (mV) 0
Offset Prefix [+]
IOA Voltage Offset (mV) 0
Offset Prefix [+]
IOA Voltage Offset (mV) 0
Offset Prefix [+]
Ch0WriteVref 0-108
Default = 54
1 Step = 4 mV
→ ←:Select Screen
↑↓ :Select Item
Enter : Select
+/- : Change Opt.
F1:General Help
F2:Previous Values
F3:Optimized Defaults
F4:Save & Exit
ESC:Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

Ch0WriteVref 0.746 V (Auto)

This item allows you to adjust the Ch0WriteVref from 0 to 108, and the default is 54, 1 step is 4mV.

Ch1WriteVref 0.746 V (Auto)

This item allows you to adjust the Ch1WriteVref from 0 to 108, and the default is 54, 1 step is 4mV.

ChVrefCA 0.746 V (Auto)

This item allows you to adjust the ChVrefCA from 0 to 108, and the default is 54, 1 step is 4mV.

ChReadVref 0.746 V (Auto)

This item allows you to adjust the ChReadVref from 0 to 108, and the default is 54, 1 step is 4mV.

CPU/RING/Cache/GT Adaptive Voltage Target(mV) (0)

This item allows you to adjust the CPU/RING/Cache/GT Adaptive voltage target from 0 to 2000mV.

CPU/RING/Cache/GT Voltage Mode (Adaptive)

This item allows you to set the CPU/RING/Cache/GT voltage mode.

CPU/RING/Cache/GT/UNCORE/IOA/IOD Voltage Offset(mV) (0)

This item allows you to adjust the CPU/RING/Cache/GT/UNCORE/IOA/IOD voltage offset from -1000 to 998mV.

Offset Prefix (+)

This item allows you to select the offset value as positive (+) or negative (-).

SVID Control Enable (Enabled)

This item allows you to enable or disable the SVID control. If this function be disabled, it will not be changed until CPU powers down.

SVID Override Voltage Target(mV) (0)

This item allows you to adjust the SVID override voltage target, up to 2500mV.

FIVR Faults Enable (Enabled)

This item allows you to enable or disable the FIVR faults. If this function is disabled, it will not be changed until CPU powers down.

FIVR Efficiency Enable (Enabled)

This item allows you to enable or disable the FIVR efficiency. If this function is disabled, it will not be changed until CPU powers down.

Press <Esc> to return to the M.I.B. X Menu page.

Spread Spectrum (Auto)

If you enable spread spectrum, it can significantly reduce the EMI (Electro-Magnetic Interference) generated by the system.

Intel (R) Core (TM) i3-4330T CPU @ 3.00GHZ

This is display-only field and displays the information of the CPU installed in your computer.

Processor Speed (3000 MHz)

This item shows the CPU speed.

Memory Frequency (1333 MHz)

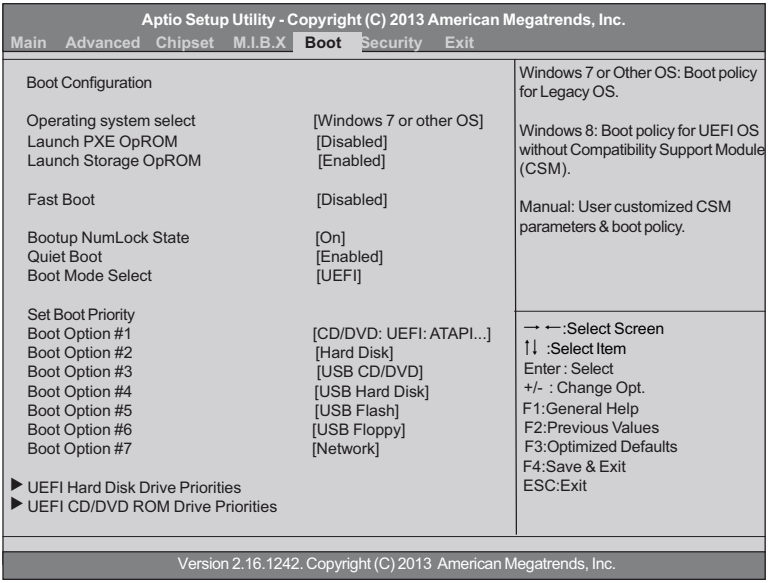
This item shows the memory frequency.

Total Memory (4096 MB (DDR3))

This item shows the total memory.

Boot Menu

This page enables you to set the keyboard NumLock state.


Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
Main Advanced Chipset M.I.B.X Boot Security Exit
Boot Configuration
Operating system select [Windows 7 or other OS]
Launch PXE OpROM [Disabled]
Launch Storage OpROM [Enabled]
Fast Boot [Disabled]
Bootup NumLock State [On]
Quiet Boot [Enabled]
Boot Mode Select [UEFI]
Set Boot Priority
Boot Option #1 [CD/DVD: UEFI: ATAPI...]
Boot Option #2 [Hard Disk]
Boot Option #3 [USB CD/DVD]
Boot Option #4 [USB Hard Disk]
Boot Option #5 [USB Flash]
Boot Option #6 [USB Floppy]
Boot Option #7 [Network]
▶ UEFI Hard Disk Drive Priorities
▶ UEFI CD/DVD ROM Drive Priorities
Windows 7 or Other OS: Boot policy for Legacy OS.
Windows 8: Boot policy for UEFI OS without Compatibility Support Module (CSM).
Manual: User customized CSM parameters & boot policy.
→ ←:Select Screen
↑↓ :Select Item
Enter : Select
+/- : Change Opt.
F1:General Help
F2:Previous Values
F3:Optimized Defaults
F4:Save & Exit
ESC:Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

Boot Configuration

This item shows the information of the Boot Configuration.

Operation System Select (Windows 7 or other OS)

This item is used to select the operation system.

Launch PXE OpROM (Disabled)

The item enables or disables launch PXE Option ROM.

Launch Storage OpROM (Enabled)

Use this item to enable or disable the Storage OpROM.

Fast Boot (Disabled)

This item enables or disables boot with initialization of a minimal set of device required to launch active boot option. Has no effect for BBS boot options.

Bootup NumLock State (On)

This item enables you to select NumLock state.

Quiet Boot (Enabled)

This item enables or disables quiet boot.

Boot mode select (LEGACY)

Use this item to select boot mode.

Set Boot Priority

This item enables you to set boot priority for all boot devices.

Boot Option #1 /2 /3 /4 /5 /6 /7

These items show the boot priorities.

Hard Disk Drive/ CDROM/DVD Drive BBS Priorities

These items enable you to specify the sequence of loading the operating system. Press <Enter> to see the submenu.

UEFI Hard Disk Drive Priorities

This item enables you to specify the sequence of loading the operating system from the installing Hard Disk drive. (This item only shows when there is boot device connecting)

Press<Enter> to see the submenu.

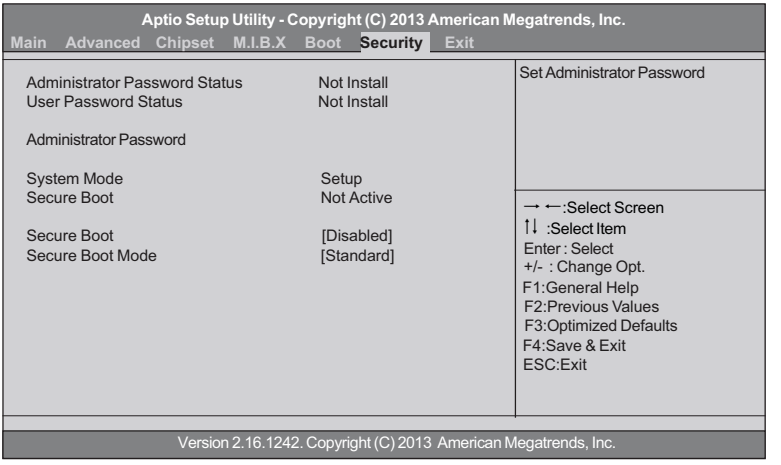
UEFI CD/DVD ROM Drive Priorities

This item enables you to specify the sequence of loading the operating system from the installing CD/DVD ROM drive. (This item only shows when there is boot device connecting)

Press<Enter> to see the submenu.

Security Menu

This page enables you to set setup administrator password and user password.



Administrator Password Status (Not Install)

This item shows administrator password installed or not.

User Password Status (Not Install)

This item shows user password installed or not.

System Mode (Setup)

This item allows you to set the system mode.

Secure Boot (Disabled)

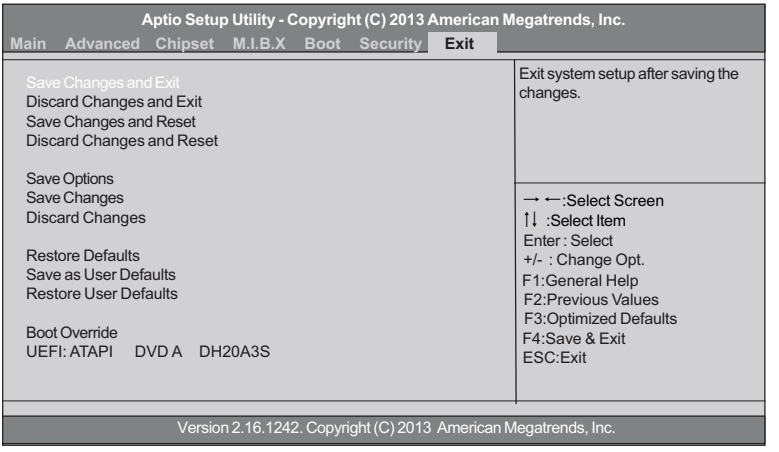
This item is used to control the secure boot flow, it is possible only if system runs in User Mode.

Secure Boot Mode (Standard)

This item allows you to set the Secure Boot Mode.

Exit Menu

This page enables you to exit system setup after saving or without saving the changes.



Save Changes and Exit

This item enables you to exit the system setup after saving the changes.

Discard Changes and Exit

This item enables you to exit system setup without saving any changes.

Save Changes and Reset

This item enables you to reset system setup after saving the changes.

Discard Changes and Reset

This item enables you to reset system setup without saving any changes.

Save Options

This item enables you to save the options that you have made.

Save Changes

This item enables you to save the changes that you have made.

Discard Changes

This item enables you to discard any changes that you have made.

Restore Defaults

This item enables you to restore defaults to all the setup options.

Save as User Defaults

This item enables you to save the changes that you have made as user defaults.

Restore User Defaults

This item enables you to restore the user defaults.

Boot Override

Use this item to select the boot device.

Updating the BIOS

You can download and install updated BIOS for this motherboard from the manufacturer's Website. New BIOS provides support for new peripherals, improvements in performance, or fixes for known bugs. Install new BIOS as follows:

1 If your motherboard has a BIOS protection jumper, change the setting to allow BIOS flashing.

2 If your motherboard has an item called Firmware Write Protect in Advanced BIOS features, disable it. (Firmware Write Protect prevents BIOS from being overwritten.)

3 Prepare a bootable device or create a bootable system disk. (Refer to Windows online help for information on creating a bootable system disk.)

4 Download the Flash Utility and new BIOS file from the manufacturer's Web site. Copy these files to the bootable device.

5 Turn off your computer and insert the bootable device in your computer. (You might need to run the Setup Utility and change the boot priority items on the Advanced BIOS Features Setup page, to force your computer to boot from the bootable device first.)

6 At the C:\ or A:\ prompt, type the Flash Utility program name and the file name of the new BIOS and then press <Enter>. Example: AFUDOS.EXE 040706.ROM

7 When the installation is complete, remove the bootable device from the computer and restart your computer. If your motherboard has a Flash BIOS jumper, reset the jumper to protect the newly installed BIOS from being overwritten. The computer will restart automatically.

This concludes Chapter 3. Refer to the next chapter for information on the software supplied with the motherboard.

Chapter 4

Intel® Matrix Storage Manager RAID Configuration

The Intel® Matrix Storage Manager allows you to configure RAID 0, and 1 sets on the external Serial ATA hard disk drives.

Before creating a RAID set

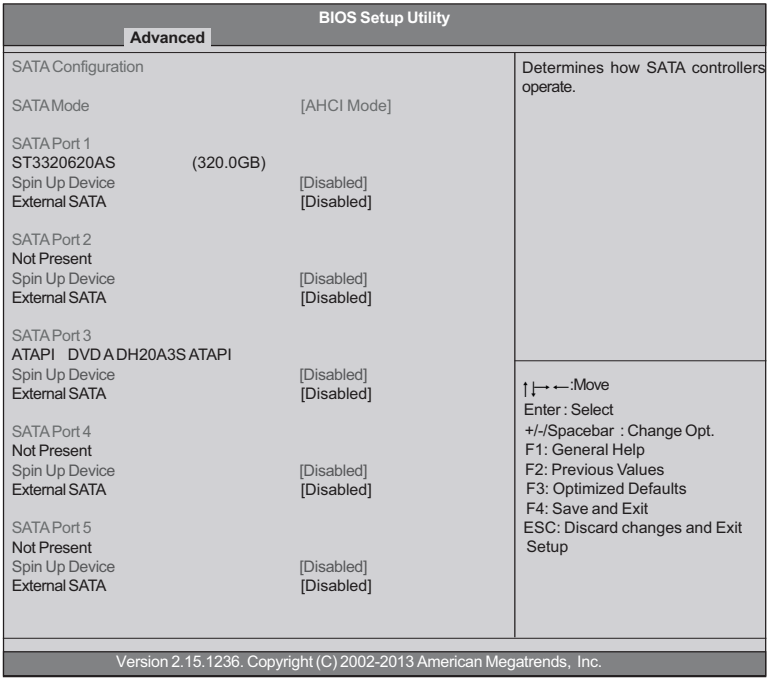
Prepare the following items:

1. One SATA HDD.
2. A write-enabled floppy disk.
3. Microsoft® Windows® OS installation disk (Windows XP/7/8).
4. Motherboard support CD with Intel® Matrix Storage Manager driver.

Complete the following steps before you create a RAID set:

1. Install the external Serial ATA hard disk drive (HDD) on your system.
2. Set the *SATA Mode* item in the BIOS from *"IDE Mode"* to *"RAID* Mode"

   See section "SATA Configuration" for details.



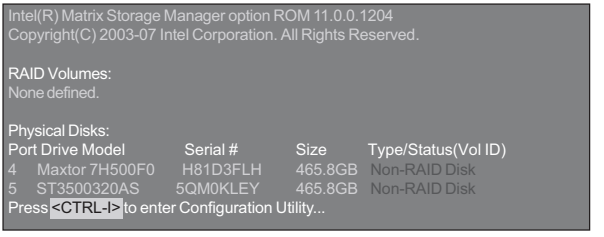
3. Enter the Intel® Matrix Storage Manager option to set up your RAID configuration.

4. Create an Intel® Matrix Storage Manager driver disk for Windows® OS installation. See section "Creating a RAID driver disk" for details.

5. Install the Intel® Matrix Storage Manager driver after the Windows® OS had been installed.

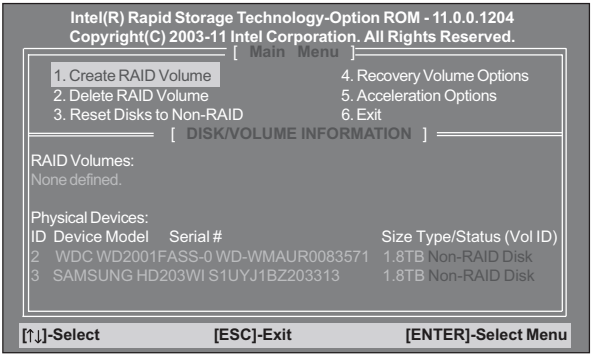
Entering Intel® Matrix Storage Manager RAID BIOS utility

1. During POST, press <Ctrl-I> to enter the Intel® Matrix Storage Manager RAID BIOS menu.


Intel(R) Matrix Storage Manager option ROM 11.0.0.1204
Copyright(C) 2003-07 Intel Corporation. All Rights Reserved.
RAID Volumes:
None defined.
Physical Disks:
Port Drive Model Serial # Size Type/Status(Vol ID)
4 Maxtor 7H500F0 H81D3FLH 465.8GB Non-RAID Disk
5 ST3500320AS 5QM0KLEY 465.8GB Non-RAID Disk
Press <CTRL-I> to enter Configuration Utility...

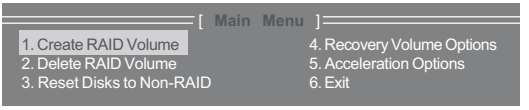
2. The main Intel® Matrix Storage Manager RAID BIOS menu appears.

3. Use the arrow keys to move the color bar and navigate through the items.

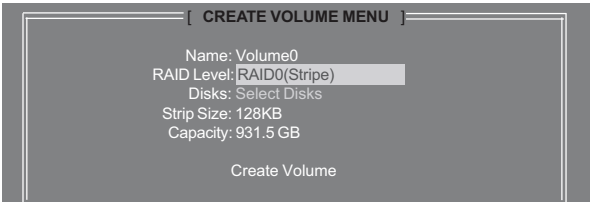

Intel(R) Rapid Storage Technology-Option ROM - 11.0.0.1204
Copyright(C) 2003-11 Intel Corporation. All Rights Reserved.
[Main Menu]
1. Create RAID Volume
2. Delete RAID Volume
3. Reset Disks to Non-RAID
4. Recovery Volume Options
5. Acceleration Options
6. Exit
[DISK/VOLUME INFORMATION]
RAID Volumes:
None defined.
Physical Devices:
ID Device Model Serial # Size Type/Status (Vol ID)
2 WDC WD2001FASS-0 WD-WMAUR0083571 1.8TB Non-RAID Disk
3 SAMSUNG HD203WI S1UYJ1BZ203313 1.8TB Non-RAID Disk
[↑↓]-Select [ESC]-Exit [ENTER]-Select Menu

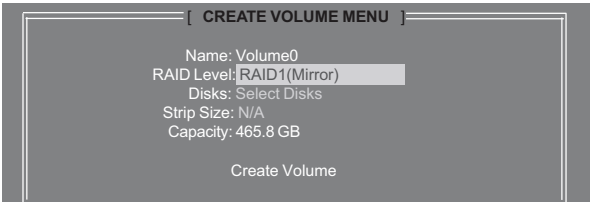
Creating a RAID set

1. In the main Intel® Matrix Storage Manager RAID BIOS menu, highlight *Create RAID Volume* using the up/down arrow key then press <Enter>.

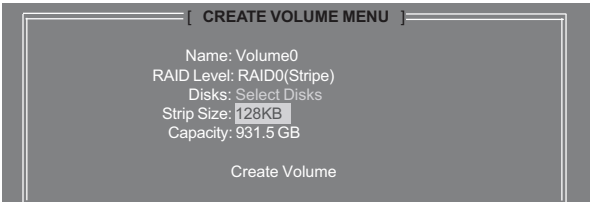


2. When the *RAID Level* item is highlighted, use the up/down arrow key to select the RAID set that you want to create.

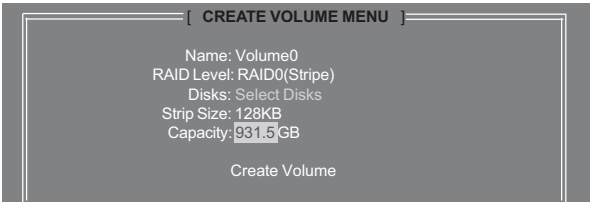




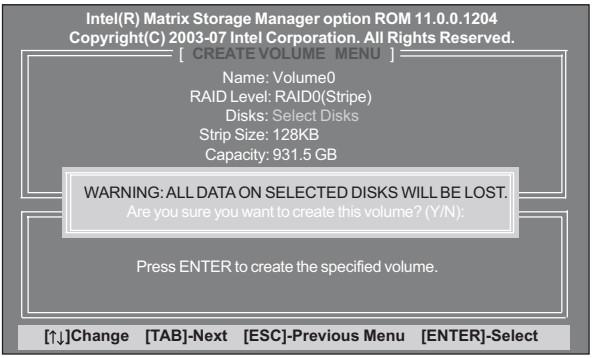
When more than two HDDs are installed in your computer, the *Disks* item will be selectable. Then users can select the HDD that you want to belong to the RAID set. Please be noticed that selecting a wrong disk will result in losing the original data of the HDD.



3. Key in the RAID volume capacity. Use the up/down arrow to choose the *Capacity*. The default value indicates the maximum capacity using the selected disks. Entering a lower capacity allows you to create a second volume on these disks.

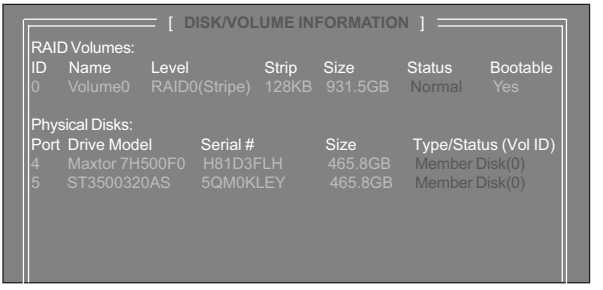


4. When done, press <Enter> to confirm the creation of the RAID set. A dialogue box appears to confirm the action. Press <Y> to confirm; otherwise, press <N>.

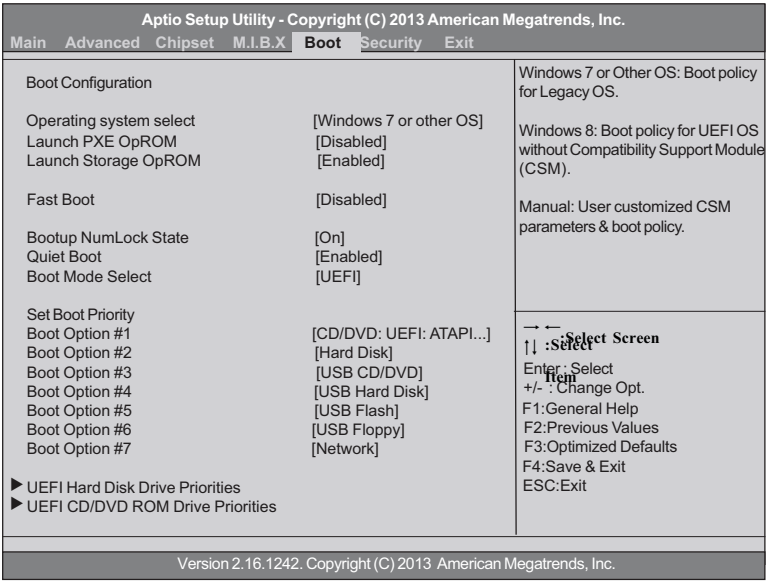

Intel(R) Matrix Storage Manager option ROM 11.0.0.1204
Copyright(C) 2003-07 Intel Corporation. All Rights Reserved.
[CREATE VOLUME MENU]
Name: Volume0
RAID Level: RAID0(Stripe)
Disks: Select Disks
Strip Size: 128KB
Capacity: 931.5 GB
WARNING: ALL DATA ON SELECTED DISKS WILL BE LOST.
Are you sure you want to create this volume? (Y/N):
Press ENTER to create the specified volume.
[↑↓]Change [TAB]-Next [ESC]-Previous Menu [ENTER]-Select

Pressing <Y> deletes all the data in the HDDs.

5. The following screen appears, displaying the relevant information about the RAID set you created.

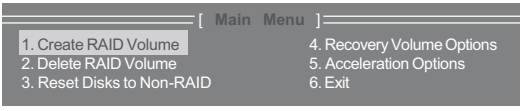

[DISK/VOLUME INFORMATION]
RAID Volumes:
ID Name Level Strip Size Status Bootable
0 Volume0 RAID0(Stripe) 128KB 931.5GB Normal Yes
Physical Disks:
Port Drive Model Serial # Size Type/Status (Vol ID)
4 Maxtor 7H500F0 H81D3FLH 465.8GB Member Disk(0)
5 ST3500320AS 5QM0KLEY 465.8GB Member Disk(0)

Users please be noted that RAID 0 (Stripe) is set to accelerate the data access, and RAID 1 (Mirror) is set to provide the data backup. If you want to set RAID 0, you need to set the *2nd Boot Device* item in the BIOS to *Intel Volume0*. See section "Advanced Setup" for details.


Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
Main Advanced Chipset M.I.B.X Boot Security Exit
Boot Configuration
Operating system select [Windows 7 or other OS]
Launch PXE OpROM [Disabled]
Launch Storage OpROM [Enabled]
Fast Boot [Disabled]
Bootup NumLock State [On]
Quiet Boot [Enabled]
Boot Mode Select [UEFI]
Set Boot Priority
Boot Option #1 [CD/DVD: UEFI: ATAPI...]
Boot Option #2 [Hard Disk]
Boot Option #3 [USB CD/DVD]
Boot Option #4 [USB Hard Disk]
Boot Option #5 [USB Flash]
Boot Option #6 [USB Floppy]
Boot Option #7 [Network]
UEFI Hard Disk Drive Priorities
UEFI CD/DVD ROM Drive Priorities
Windows 7 or Other OS: Boot policy for Legacy OS.
Windows 8: Boot policy for UEFI OS without Compatibility Support Module (CSM).
Manual: User customized CSM parameters & boot policy.
→ ← :Select Screen
↑↓ :Select Item
Enter: Select
+/- : Change Opt.
F1:General Help
F2:Previous Values
F3:Optimized Defaults
F4:Save & Exit
ESC:Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

Deleting a RAID set

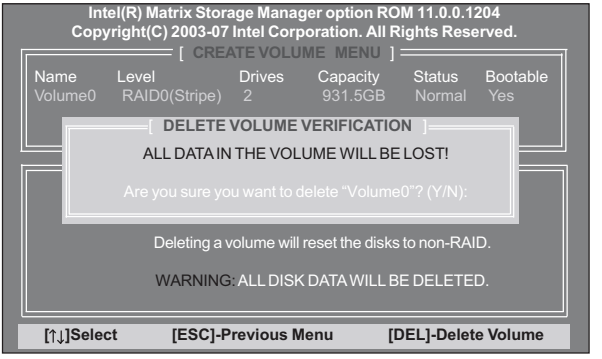
1. In the main Intel® Matrix Storage Manager RAID BIOS menu, highlight *Delete RAID Volume* using the up/down arrow key then press <Enter>.



2. Use the space bar to select the RAID set you want to delete.

   Press the <Del> key to delete the set.

3. A dialogue box appears to confirm the action. Press <Y> to confirm; otherwise, press <N>.


Intel(R) Matrix Storage Manager option ROM 11.0.0.1204
Copyright(C) 2003-07 Intel Corporation. All Rights Reserved.
[CREATE VOLUME MENU]
Name Level Drives Capacity Status Bootable
Volume0 RAID0(Stripe) 2 931.5GB Normal Yes
[DELETE VOLUME VERIFICATION]
ALL DATA IN THE VOLUME WILL BE LOST!
Are you sure you want to delete "Volume0"? (Y/N):
Deleting a volume will reset the disks to non-RAID.
WARNING: ALL DISK DATA WILL BE DELETED.
[↑↓]Select [ESC]-Previous Menu [DEL]-Delete Volume

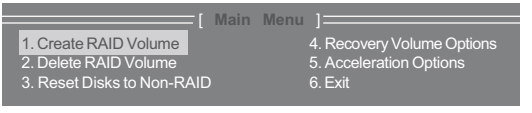
Pressing <Y> deletes all the data in the HDDs.

Resetting disks to Non-RAID

An HDD that has been previously configured as part of another RAID set in another platform is called a broken RAID HDD. When you install a broken RAID HDD, you cannot select this disk when configuring a RAID set through the Intel® Matrix Storage Manager option. If you still want to use this broken RAID HDD as part of the RAID set configured through the Intel® Matrix Storage Manager, you may do so by resetting the disk to Non-RAID. You will, however, lose all data and previous RAID configurations.

To reset disks to Non-RAID:

1. In the main Intel® Matrix Storage Manager RAID BIOS menu, highlight *Reset Disks to Non-RAID* using the up/down arrow key then press <Enter>.



Pressing <Y> deletes all the data in the HDDs.

2. Use the space bar to select the HDD to reset to Non-RAID.
3. A dialogue box appears to confirm the action. Press <Y> to confirm; otherwise, press <N>.

Exiting Setup

When you have finished, highlight *Exit* using the up/down arrow key then press <Enter> to exit the Intel® Matrix Storage Manager RAID BIOS utility.

A dialogue box appears to confirm the action. Press <Y> to confirm; otherwise, press <N> to return to the Intel® Matrix Storage Manager RAID BIOS menu.

Chapter 5
Trouble Shooting

Start up problems during assembly

After assembling the PC for the first time you may experience some start up problems. Before calling for technical support or returning for warranty, this chapter may help to address some of the common questions using some basic troubleshooting tips.

a) System does not power up and the fans are not running.

1. Disassemble the PC to remove the VGA adaptor card, DDR memory, LAN, USB and other peripherals including keyboard and mouse. Leave only the motherboard, CPU with CPU cooler and power supply connected. Make sure the power cord is plugged into the wall socket & the switch on the Power Supply Unit (PSU) is turned " on " as well. Turn on again to see if the CPU and power supply fans are running.

2. Make sure to remove any unused screws or other metal objects such as screwdrivers from the inside PC case. This is to prevent damage from short circuit.

3. Check the CPU FAN connector is connected to the motherboard.

4. For Intel platforms check the pins on the CPU socket for damage or bent. A bent pin may cause failure to boot and sometimes permanent damage from short circuit.

5. Check the 12V power connector is connected to the motherboard.

6. Check that the 12V power & ATX connectors are fully inserted into the motherboard connectors. Make sure the latches of the cable and connector are locked into place.

b) Power is on, fans are running but there is no display

1. Make sure the monitor is turned on and the monitor cable is properly connected to the PC.

2. Check the VGA adapter card (if applicable) is inserted properly.

3. Listen for beep sounds. If you are using internal PC speaker make sure it is connected.
   a. continuous 3 short beeps: memory not detected
   b. 1 long beep and 8 short beeps: VGA not detected

c) The PC suddenly shuts down while booting up.

1. The CPU may experience overheating so it will shutdown to protect itself. Apply the thermal grease onto the CPU heatsink & ensure the CPU fan is well-connected with the CPU heatsink. Check if the CPU fan is working properly while the system is running.

2. From the BIOS setting, try to disable the Smartfan function to let the fan run at default speed. Doing a Load Optimised Default will also disable the Smartfan.

Start up problems after prolong use

After a prolong period of use your PC may experience start up problems again. This may be caused by breakdown of devices connected to the motherboard such as HDD, CPU fan, etc. The following tips may help to revive the PC or identify the cause of failure.

1. Clear the CMOS values using the CLR_CMOS jumper. Refer to CLR_CMOS jumper in Chapter 2 for Checking Jumper Settings in this user manual. When completed, follow up with a Load Optimised Default in the BIOS setup.

2. Check the CPU cooler fan for dust. Long term accumulation of dust will reduce its effectiveness to cool the processor. Clean the cooler or replace a new one if necessary.

3. Check that the 12V power & ATX connectors are fully inserted into the motherboard connectors. Make sure the latches of the cable and connector are locked into place.

4. Remove the hard drive, optical drive or DDR memory to determine which of these components may be at fault.

5. Check whether there is any bulked up electrolytic capacitor or abnormal component.

Maintenance and care tips

Your computer, like any electrical appliance, requires proper care and maintenance. Here are some basic PC care tips to help prolong the life of the motherboard and keep it running as best as it can.

1. Keep your computer in a well ventilated area. Leave some space between the PC and the wall for sufficient airflow.

2. Keep your computer in a cool dry place. Avoid dusty areas, direct sunlight and areas of high moisture content.

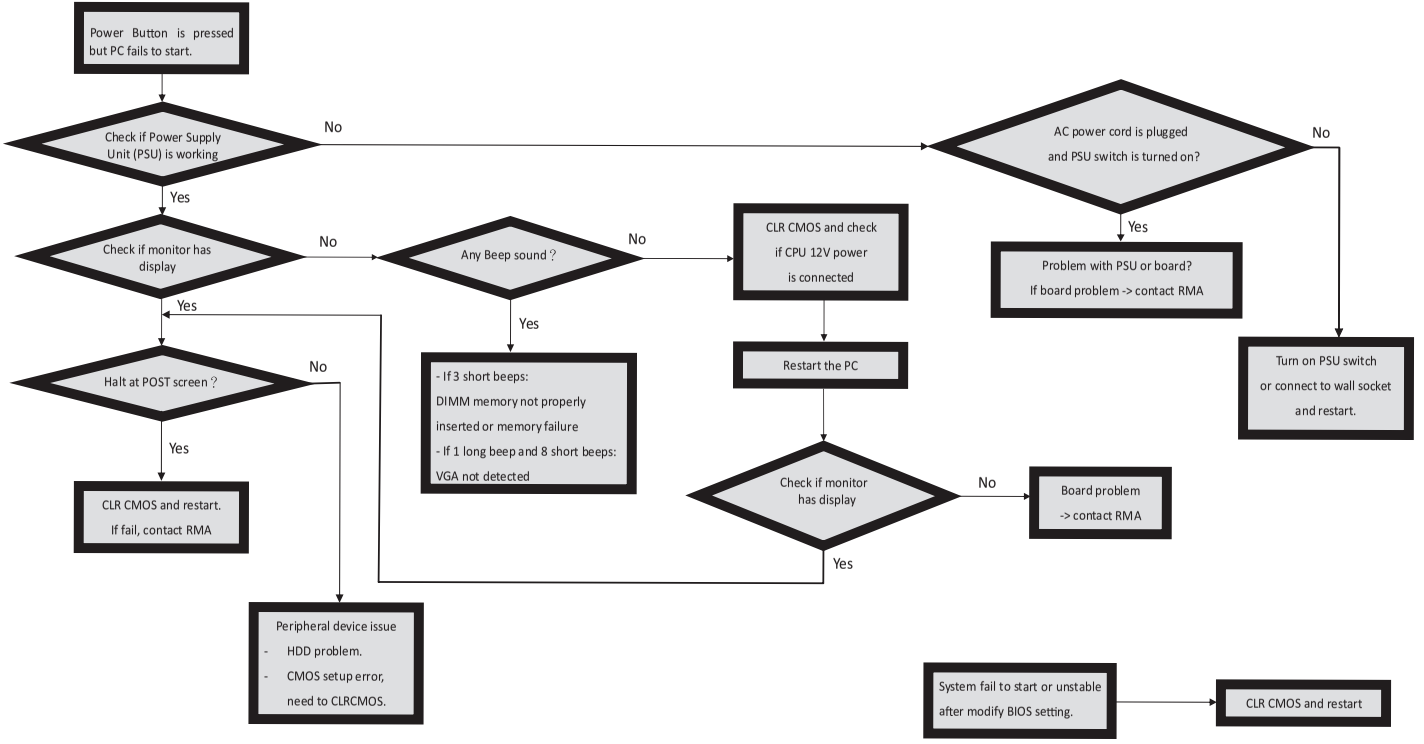
3. Routinely clean the CPU cooler fan to remove dust and hair.

4. In places of hot and humid weather you should turn on your computer once every other week to circulate the air and prevent damage from humidity.

5. Add more memory to your computer if possible. This not only speeds up the system but also reduces the loading of your hard drive to prolong its life span.

6. If possible, ensure the power cord has an earth ground pin directly from the wall outlet. This will reduce voltage fluctuation that may damage sensitive devices.

Basic Troubleshooting Flowchart


Power Button is pressed but PC fails to start.
Check if Power Supply Unit (PSU) is working
No
AC power cord is plugged and PSU switch is turned on?
No
Yes
Problem with PSU or board? If board problem -> contact RMA
Turn on PSU switch or connect to wall socket and restart.
Yes
Check if monitor has display
No
Any Beep sound ?
No
CLR CMOS and check if CPU 12V power is connected
Yes
Yes
- If 3 short beeps: DIMM memory not properly inserted or memory failure
- If 1 long beep and 8 short beeps: VGA not detected
Restart the PC
Yes
Halt at POST screen ?
No
Check if monitor has display
No
Board problem -> contact RMA
Yes
CLR CMOS and restart. If fail, contact RMA
Yes
Peripheral device issue
- HDD problem.
- CMOS setup error, need to CLRCMOS.
System fail to start or unstable after modify BIOS setting.
CLR CMOS and restart

Memo